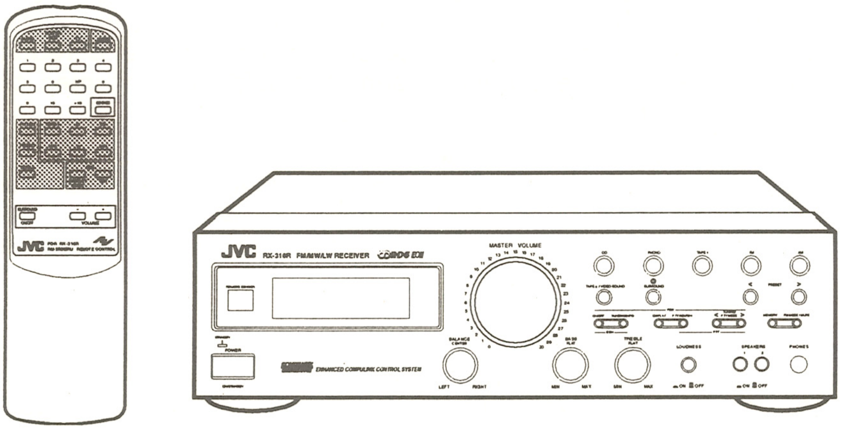
JVC

# SERVICE MANUAL

## FM/MW/LW RECEIVER

# RX-316RBK


JVC
RX-316R FM/MW/LW RECEIVER
MASTER VOLUME
POWER
BALANCE
LOUDNESS
SPEAKERS
PHONES

**Area Suffix**

| | |
|---|---|
| BS .... | the U.K. |
| EN .... | Scandinavia |
| EF .... | Continental Europe |
| G ..... | Germany |
| GI .... | Italy |

COMPU LINK
Remote
Control Component

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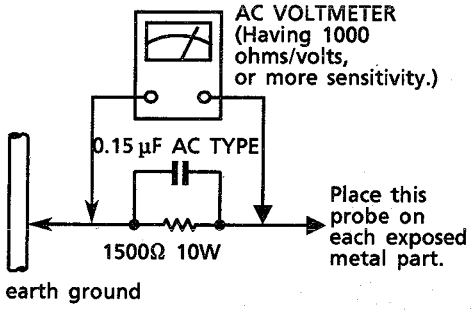
No. 20504
Feb. 1995

## Safety Precautions

1. The design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the Parts List in the Service Manual. The use of a substitute repalcement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.
5. Leakage currnet check (Electrical shock hazard testing)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, contorl shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500Ω 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and meausre the AC voltage across the resistor.
     Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).


AC VOLTMETER
(Having 1000 ohms/volts, or more sensitivity.)
0.15 μF AC TYPE
1500Ω 10W
Place this probe on each exposed metal part.
Good earth ground

## Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

# Warnings, Cautions and Others / Warnung, Achtung und sonstige Hinweise / Mises en garde, précautions et indications diverses / Waarschuwingen, voorzorgen en andere mededelingen / Avisos, precuciones y otras notas / Avvertenze e precauzioni da osservare

**IMPORTANT** for the U.K.

**DO NOT** cut off the mains plug from this equipment. If the plug fitted is not suitable for the power points in your home or the cable is too short to reach a power point, then obtain an appropriate safety approved extension lead or consult your leader.

**BE SURE** to replace the fuse only with an identical approved type, as originally fitted.

If nontheless the mains plug is cut off ensure to remove the fuse and dispose of the plug immediately, to avoid a possible shock hazard by inadvertent connection to the mains supply.

If this product is not supplied fitted with a mains plug then follow the instructions given below:

**IMPORTANT.**

**DO NOT** make any connection to the terminal which is marked with the letter E or by the safety earth symbol or coloured green or green-and-yellow.

The wires in the mains lead on this product are coloured in accordance with the following code:

Blue : Neutral
Brown : Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

**IF IN DOUBT - CONSULT A COMPETENT ELECTRICIAN**

**IMPORTANT FOR AC OUTLET(S)**

Connect only the audio equipments. Moreover do not connect any equipments which have a power consumption exceeding the value indicated by the AC OUTLETS.

This apparatus does connect with the mains line even when POWER is set to STANDBY. The power of this apparatus can be also controlled from the remote control unit. Disconnect the mains plug to shut the power off completely.

Dieses Gerät bleibt mit dem Stromnetz verbunden, auch wenn der Netzschalter (POWER) auf STANDBY steht. Dieses Gerät kann auch über Ferbedienung ain- und ausgeschitet werden. Um das Gerät aber vollständig vom Stromnetz zu trennen, muB der Stecker aus der Steckdose gezogen werden.

Cet appareil reste connecté à l`alimentation secteur même quand POWER est réglé sur STANDBY. L`alimentation de cet appareil peut aussi être contrôlée à partir de la télécommande. Déconnectez la prise d'alimentation pour mettre l'appareil complètement hors tension.

Zolang de stekker van het netsnoer in het stopkontakt steekt, blijft het apparaat onder spanning staan, zelfs als de POWER schakelaar op "STANDBY" staat. Dit apparaat kan ook in-en uitgeschakeld worden met de afstandsbediening. Als u het apparaat geheel spanningsvrij wilt hebben, trek de stekker van het netsnoer dan uit het stopkontakt.

Este aparatus permanecerá conectado a la red de CA incluso aungue ponga POWER en STANDBY. La alimentación de este aparato también podrá controlarse con el controlador remoto. Para desconectar completamente la alimentación, desconecte el enchufe del cable de alimentación de CA.

Questo apparecchio rimane collegato alla rete di alimentazione anche se l'interruttore POWER viene regolato su STANDBY. L`alimentazione di questo aparecchio può essere controllata anche con il telecomando. Scollegare il cavo di alimentazione per spegnere complemente l'apparecchio.

## CAUTION

To reduce the risk of electrical shocks, fire, etc.:

1. Do not remove screws, covers or cabinet.
2. Do not expose this appliance to rain or moisture.

## ACHTUNG

Zur Verhinderung von elektrischen Schtâgen, Brandgefahr, usw:

1. Keine Schrauben lõsen oder Abdeckungen entfernen und nicht das Gehäuse öilnen.
2. Dieses Gerät weder Regen noch Feuchtigkeit aussetzen.

## ATTENTION

Alin d'èviter tout risque d'électrocution, d'incendie, etc.:

1. Ne pas enlever les vis ni les panneaux et ne pas ouvrir le coffret de l'appareil.
2. Ne pas exposer l'appareil à la pluie ni à l'humidité.

## VOORZICHTIG

Ter vermindering van gevaar voor brand, elektrische schokken, enz.:

1. Verwijder geen schroeven, panelen of de behuizing.
2. Stel dit toestel niet bloot aan regen of vocht.

## PRECAUCIÓN

Para reducir riesgos de choques eléctricca, incendio, etc.:

1. No extraiga los tornillos, los cubiertas ni la caja.
2. No exponga este aparato a la lluvia o a la humedad.

## ATTENZIONE

Per ridurre il rischio di schock elettrici, incendi, ecc...

1. Non togliete viti, coperchi o la scatola.
2. Non esponete l`apparecchio alla piogggia e all'umidità.

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# Introduction

Thank you for purchasing the JVC RX-316RBK receiver. We hope it will be a valued addition to your audio system. Be sure to read these instructions carefully before installing and operating the receiver.

## Features

- Monitor recording quality
- Surround feature with two or four speakers
- Remote control
- RDS (Radio Data System) with EON (Enhanced Other Network)
- Preset radio stations
- Easy to use

## About This Manual

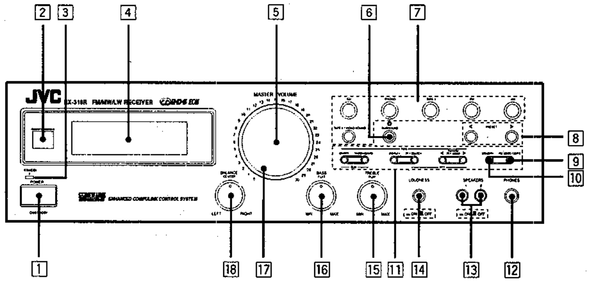
This manual gives you the basic information you need to install and use your receiver. It explains everything you need to know from turning the power switch on to basic troubleshooting. Please consult your JVC dealer if you have further questions about the receiver.

The following conventions are used in this manual:

- Controls, buttons, and connection points on the back of the receiver are indicated with capital letters, like this: POWER button, AUDIO jacks
- Messages that appear on the display window are indicated with capital letters and in quotes, like this: "TUNED"
- Instructions that you need to follow to get the correct results are labeled ***IMPORTANT!***
- Helpful information is labeled *NOTE:*
- To avoid electric shock to yourself or damage to the receiver, read the information labeled ⚠ **CAUTION!**

# Switches and Controls

Familiarize yourself with the main switches and controls on your JVC RX-316RBK receiver.

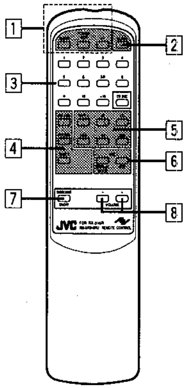


**Receiver**

| | |
|---|---|
| 1 | POWER switch |
| 2 | REMOTE SENSOR window |
| 3 | STANDBY indicator |
| 4 | Display window |
| 5 | MASTER VOLUME control |
| 6 | SURROUND button |
| 7 | SOURCE SELECT buttons |
| 8 | PRESET buttons |
| 9 | FM MODE/MUTE button |
| 10 | MEMORY button |
| 11 | RDS/TUNING buttons |
| 12 | PHONES jack |
| 13 | SPEAKERS buttons |
| 14 | LOUDNESS button |
| 15 | TREBLE control |
| 16 | BASS control |
| 17 | MASTER VOLUME indicator |
| 18 | BALANCE control |

**Remote Control**

| | |
|---|---|
| 1 | POWER switch<br>Turns on the Unit or puts it in standby mode |
| 2 | SLEEP button |
| 3 | • Numeric button for only FM/AM<br>• Control button for CD and CD Changer |
| 4 | SOURCE SELECT buttons |
| 5 | Tape 1 and CD control buttons |
| 6 | RDS button |
| 7 | SURROUND button |
| 8 | VOLUME adjuster |



# Installation

This section explains how to connect the receiver to other stereo equipment and speakers, and how to connect the power supply.

## ⚠ Cautions

**Before Installation**

⚠ **CAUTION!** Before installing your receiver:

- Make sure your hands are dry.
- Turn the power off to all components.
- Read the installation instructions for all components you are going to connect.

**Positioning the Receiver**

⚠ **CAUTION!**

- Install the receiver in a location that is level and protected from moisture.
- The temperature around the receiver must be between 23° and 104° F (–5° and 40° C).
- Make sure there is good ventilation around the receiver. Poor ventilation could cause overheating and damage the receiver.

**Making Power Connections**

⚠ **CAUTION!**

- Do not handle the power cord with wet hands.
- Do not pull on the power cord to unplug the receiver. Always grab the plug directly so as not to damage the cord.

**Handling the Receiver**

⚠ **CAUTION!**

- Do not insert any metal object into the receiver.
- Do not disassemble the receiver or remove screws, covers, or cabinet.
- Do not expose the receiver to rain or moisture.

## Connecting Stereo Equipment

**Before Starting**

Before connecting the receiver, read the following paragraphs carefully.

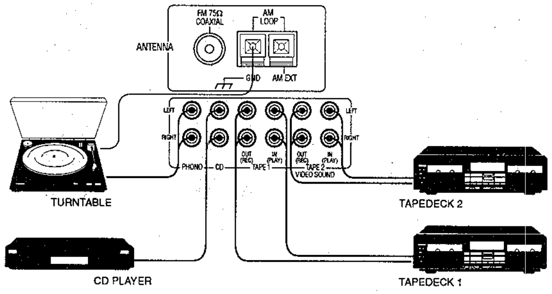
***IMPORTANT!*** *The left channel of any audio component must be connected to the left-channel jack of the receiver, and the right channel to the right-channel jack. If they are reversed, the stereophonic image will not be correct.*

***NOTE:*** *To ensure correct connections, insert the red plug into the right channel.*

**Basic Connections**

Connect stereo component to the amplifier using cables with RCA PIN plugs. Connect the output jacks on a tape deck to the jacks marked IN (PLAY) on the amplifier, and the input jacks to those marked OUT (REC).

***NOTE:*** *Any turntables incorporating a small-output cartridge such as an MC (moving-coil type) must be connected to this amplifier through a commercial head amplifier or step-up transformer. Direct connection may result in insufficient volume.*



***NOTE:*** *If a ground cable is fitted to your turntable, connect the ground cable to the AM LOOP terminal marked GND. In this case, do not disconnect the AM LOOP wire from the GND terminal.*

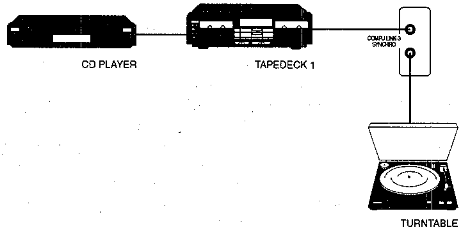
## COMPU LINK-3 Connections

COMPU LINK-3 SYNCHRO jacks on the back of the receiver connect the COMPU LINK remote control system. This system connects other JVC audio components with the receiver to make listening and recording more convenient. To use this system, attach the cables provided with your JVC components to the COMPU LINK-3 SYNCHRO jacks on the rear panel of each component. Then connect the cables to the receiver.

*NOTES:*

- *COMPU LINK-3 is an upgraded version of COMPU LINK-1. If your equipment provides COMPU LINK-1 jacks, you can still connect your equipment, but slight imperfections may result. Automatic Power ON/OFF, for example, may not always function properly.*
- *Refer to page 19 for details about the COMPU LINK remote control system.*

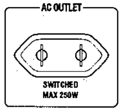
⚠ **CAUTION!** Do not connect Tape Deck 2 to the COMPU LINK jacks. It may cause the COMPU LINK system to malfunction.



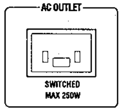
## Other Audio Connections

Use the socket on the back of the receiver to connect the power supply of any audio components. By pressing the POWER switch on the remote control, you can turn the receiver, and all connected components, on or off at the same time.

⚠ **CAUTION!** Do not connect any components that consume more power than the capacity of the AC outlets. This capacity is indicated below the socket on the back of the receiver.



For Continental Europe



For the U.K.

The FUSE holder is provided near the AC OUTLET except for the U.K., Germany, and Italy.

## Connecting Speakers

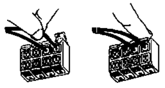
### Before Starting

Up to four speakers (two sets) can be connected to the receiver. Connecting four speakers will allow you to use the built-in Surround feature.

### Connecting Speakers

Connect speakers to the SPEAKERS terminals on the back of the receiver. Use the wire supplied with the speakers.

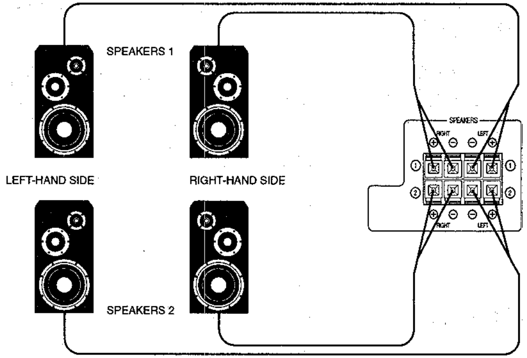
To connect each speaker, follow these steps:



**Step 1** Open each terminal on the back of the receiver and insert the end of the speaker wire, as shown.

**Step 2** Close the terminals to clamp the speaker wires in place, as shown.

⚠ **CAUTION!** Use speakers with the same speaker impedance indicated by the speaker terminals on the back of this unit.



## Connecting an AM Antenna

### Before Starting

One AM loop antenna is supplied with your receiver.

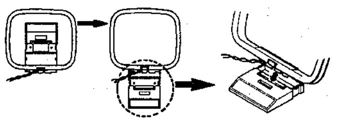
### Basic Connections

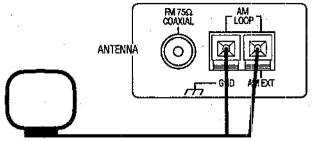
To connect the AM loop antenna to the AM LOOP terminals, follow these steps:

**Step 1** Open each terminal and insert one of the two ends of the AM antenna wire.

**Step 2** Close the terminals to clamp the antenna wires in place.

**Step 3** Stand the AM loop antenna on its own base, as shown. Set it on any flat surface.



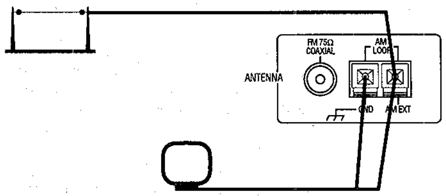


### AM Outdoor Antenna

If your AM broadcast reception is unsatisfactory, you should connect an AM outdoor antenna in addition to the loop antenna. The antenna wire should be 16 to 40 feet (5 to 13 meters) long.

Connect one end of the outdoor single vinyl-covered antenna wire to the AM LOOP terminal marked AM EXT.

> ***IMPORTANT!*** *The AM loop antenna must be installed to receive AM broadcasts. Do not disconnect the loop antenna when installing an outdoor antenna.*
>
> ***IMPORTANT!*** *Except for the connection, make sure no uninsulated antenna wire touches the rear panel of the receiver. Otherwise, the receiver might not pick up AM broadcasts.*



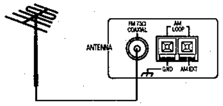
## Connecting an FM Antenna

### Before Starting

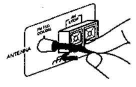
The type of terminal provided for connecting an FM antenna depends on your geographic area. Read the section below which corresponds to your area.

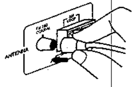
> ***IMPORTANT!*** *Make sure the antenna conductors do not touch any other terminals on the receiver. This could cause poor reception.*

### For Germany

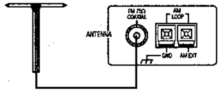


You have two options for connecting an FM antenna. Connect the included wire antenna as shown in option ⓐ, or purchase antenna and cable with connector DIN 45332 and attach as shown in option ⓑ.


ⓐ

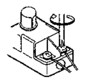

ⓑ

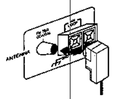
### For Other European Countries



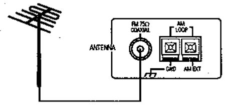
Connect the antenna cable to the FM75ΩCOAXIAL terminal using the Antenna Adaptor. You have two options — a 300-ohm feeder cable, or a 75-ohm coaxial cable.

To attach the Antenna Adaptor to the 300-ohm feeder cable, secure the two conductors to the screws of the Antenna Adaptor, as shown at the left.





To attach the Antenna Adaptor to the 75-ohm coaxial cable, follow these steps:



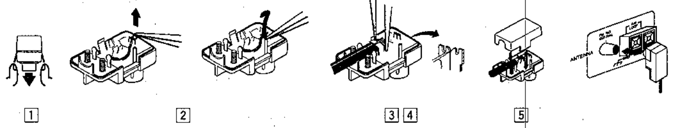
**Step 1** Remove the cover of the Antenna Adaptor by lifting the tabs on both sides.

**Step 2** Remove the jumper wire in the Antenna Adaptor with a tweezer.

**Step 3** Insert the center conductor of the coaxial cable into the notch located in the center of the fitting at the end of the Antenna Adaptor.

**Step 4** Using a pair of pliers, secure the fitting in the center of the Antenna Adaptor so that the shield brald of the coaxial cable is held tightly in the fitting.

**Step 5** Snap the cover back onto the Antenna Adaptor.



## Connecting the Power

### Connecting the Power Supply

After checking all connections, insert the power cord plug into an outlet.

When the power supply is connected correctly, the POWER STANDBY indicator lights on the front of the receiver. A small amount of power (3 watts) is consumed under these conditions, even if the receiver is turned off. To shut off the power completely, unplug the power cord from the outlet.

⚠ **CAUTION!**

- Do not handle the power cord with wet hands.
- Do not pull on the power cord to unplug the receiver. Always grasp the plug directly so as not to damage the cord.
- Do not plug the power cord into a socket until all components are connected correctly.

***IMPORTANT!*** *If the power cord is disconnected or a power failure occurs, the receiver settings in memory fade away for 2 or 3 days.*

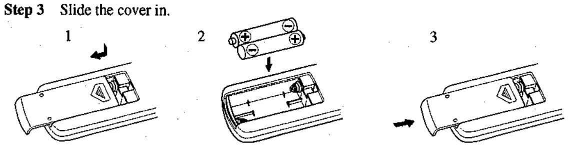
### Inserting Batteries into the Remote Control

The remote control requires two batteries (supplied). To insert batteries, follow these steps:

**Step 1** On the back side of the remote control, press down on the battery cover and slide it out.

**Step 2** Insert batteries. Make sure to observe the proper polarity: (+) to (+) and (–) to (–).

**Step 3** Slide the cover in.



### Replacing Batteries

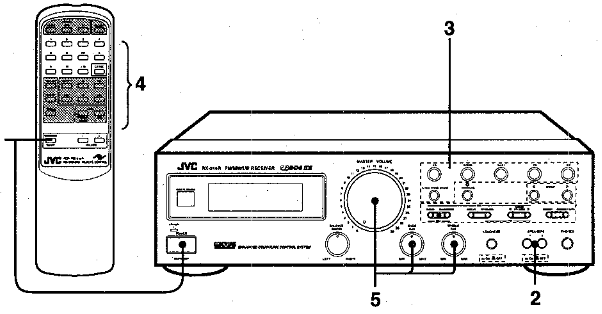
If the range or effectiveness of the remote control decreases, replace the batteries. Use two (2) dry-cell batteries of the R6P (SUM-3)/AA (15F) type.

⚠ **CAUTION!** Follow these precautions to avoid leaking or cracking cells:

- Place batteries in the remote control so they match the polarity indicated (+) to (+) and (–) to (–).
- Use the correct type of batteries. Batteries that look similar may differ in voltage.
- Always replace both batteries at the same time.
- Do not expose batteries to heat or flame.

# Operation Outline

## Basic Operation Reference



### 1 Turn on the power

Push the POWER switch to turn on the receiver. For instance, the display lights as follows:

*NOTE: Pushing the POWER switch again turns off the power and lights the STANDBY light. A small amount of power (3 watts) is consumed and the STANDBY indicator is lit in the standby mode. To turn the power off completely, disconnect the power cord from the wall outlet.*

### 2 Select speakers (page 17)

Use the SPEAKERS switch to choose between the two sets of speakers. To use your headphones, insert the headphone plug into the PHONES jack on the receiver.

### 3 Choose an audio source (page 11)

To choose an audio source, press one of the SOURCE SELECT buttons on the receiver or select one of the components on the remote control.

### 4 Operate the audio source (pages 19-21)

Refer to the manual provided with each component. If your JVC components are connected to the COMPU LINK jack of the receiver, you can operate them using the remote control.

### 5 Adjust volume and tone (pages 17-18)

Rotate the MASTER VOLUME control on the receiver or press the VOLUME button on the remote control to adjust volume. See page 17 for other ways to change the volume or tone.

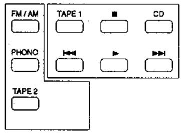
# Selecting the Audio Source

The receiver can receive input from compact discs, cassette tapes, turntables, or any audio source that you connect. You can select a source for either listening or recording.

## Listening

Press one of the SOURCE buttons on the receiver or the remote control.

| | |
|---|---|
| CD* | Listen to the CD player. |
| PHONO* | Listen to a record. |
| TAPE 1* | Listen to the tape deck connected to the TAPE 1 jacks. |
| TAPE 2 / VIDEO SOUND | Listen to the tape deck connected to the TAPE 2/VIDEO SOUND jacks. |
| FM* | Listen to an FM broadcast. |
| AM* | Listen to an AM broadcast. |



***IMPORTANT!** The TAPE 2/VIDEO SOUND button has a different function from other source selector buttons, because it allows you to monitor the quality of the recording. For more details, see Monitoring below.*

*NOTE: On the remote, when you press one of the SOURCE buttons marked above with an asterisk, the receiver automatically turns ON (even if it was OFF before).*

## Recording

The source being played is automatically selected as the source to be recorded. While recording, you can listen to the selected source at any desired volume and tone settings.

*NOTE: Volume and Tone adjustments and the surround sound effect do not affect recording.*

***IMPORTANT!** When recording from TAPE 2 to TAPE 1, press the TAPE 2/VIDEO SOUND button and another button other than TAPE 1.*

**Monitoring**

Using the Monitor feature, you can compare the sound quality of the source to the sound quality of the recording being made.

To use the Monitor feature while recording onto a cassette deck connected to the TAPE 2 jacks, follow these steps:

**Step 1** Press the TAPE 2/VIDEO SOUND button.

The "TAPE 2 MONITOR" light appears and you can listen to the sound of the cassette deck connected to the TAPE 2 jacks. You are now hearing the quality of the recording, not the quality of the source.

**Step 2** Press the TAPE 2/VIDEO SOUND button again.

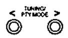
This turns off the "TAPE 2 MONITOR" light, and the speakers play the previously selected source.

*NOTE: If the cassette deck has three heads, you can hear the sound of the recording at the same time as it records on the tape.*

# Receiving an AM/FM Broadcast

To receive an AM/FM broadcast, select either AM or FM using the AM button or FM button. Then tune to the precise frequency using the TUNING buttons.

## Tuning



Tune to the frequency of a desired station using the TUNING buttons. Pressing the right button increases the frequency, and pressing the left button decreases the frequency. Tapping the TUNING button once changes the frequency in steps of 1 kHz for LW, 9 kHz for MW and 50 kHz for FM.

On the model that can receive LW (Long-Wave) broadcast, AM tuning will skip to the lower limit of the MW (Middle-Wave) frequencies when it reaches the upper limit of the LW frequencies and vica versa.

There are two tuning modes: Manual and Automatic.

**Manual Tuning**

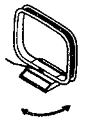
If you know the frequency of a desired station, hold down the TUNING button to start the frequency changing quickly. Release the TUNING button near the desired station and tap it repeatedly until you arrive at the correct frequency.

**Automatic Tuning**

If you want to scan frequencies for a desired station, hold down the TUNING button to start the frequency changing quickly. When you release the TUNING button, the frequency continues to change until it reaches a station.

When a station is correctly tuned, the "TUNED" light appears on the display window.

Once a tuned frequency is preset, it can be directly recalled using the PRESET buttons. For details, see page 13.



*NOTE: When you use automatic tuning, weak stations are ignored. To pick up weak stations, use manual tuning.*

***IMPORTANT!** If the receiver is tuned to a station but the "TUNED" light does not appear, try rotating the antenna for better reception.*

## Selecting an FM Reception Mode

Pressing the FM MODE/MUTE switch switches between these modes.

The "MUTE-AUTO" light appears on the display window. You hear either stereo sound or monaural sound, depending on the broadcast. If it is a stereo broadcast, the "STEREO" light appears. This mode is also useful for suppressing static "noise" between stations.

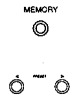
The "MUTE-AUTO" light disappears. You hear monaural sound even if a broadcast is in stereo. This mode is also useful when a stereo broadcast is noisy because of a weak signal.

*NOTE: Using the Automatic Tuning mode, the sound of a broadcast with a weak signal may be muted. In this case, select the monaural mode.*

## Presetting Tuned Frequencies

You can preset up to total 40 FM/AM radio stations by assigning channel numbers (1 through 40) to them. Once a station is preset, you can listen to it by entering the preset number using the PRESET buttons on the receiver, or the numeric buttons of the remote.

**Presetting**



To use presetting to assign channel numbers to your favorite stations, follow these steps:

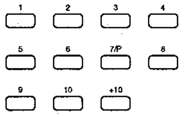
**Step 1** Tune to a station. If necessary, follow the procedure on page 12.

**Step 2** Press the MEMORY button.
The "MEMORY" light appears in the display window.

**Step 3** Using the PRESET buttons, enter a number (1 through 40). This number is the channel number you are assigning to the station.

***IMPORTANT!*** *You must enter the channel number while the "MEMORY" light is on. You have about 5 seconds to do this. If the light disappears before you enter the channel number, press the MEMORY button again.*

**Step 4** While the preset channel number is flickering, press the memory button again. When the MEMORY light disappears and the channel number is displayed, presetting is completed.



To choose numbers from 1 through 40, press the +10 key and numeric button on the remote.

| | |
|---|---|
| To choose 17 | Press +10, then 7. |
| To choose 20 | Press +10, then 10. |
| To choose 25 | Press +10 twice, then 5. |
| To choose 40 | Press +10 three times, then 10. |

*NOTE: You can also tune using the remote control. First press the FM/AM button on the remote, then enter the channel number using the numeric buttons on the remote.*

## Using the RDS (Radio Data System) to Receive FM Stations

RDS allows FM stations to send additional signal along with their regular program signals. For example, the stations send their station names, and information about what type of program they broadcast, such as sports or music, etc.

When tuned to an FM station which provides the RDS service, the RDS indicator lights up.

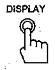
With the RX-316RBK, you can receive the following types of RDS signals.

| | |
|---|---|
| PS (Program Service) : | shows station names commonly known |
| PTY (Program Type) : | shows types of broadcast programs |
| RT (Radio Text) : | shows text messages the station sends |

## What information can RDS signals provide?

You can see the RDS signals the station sends on the display.

**To show the RDS signals on the display:**
Press the DISPLAY button or DISPLAY MODE on the remote control while listening to an FM station.



Each time you press the button, the display changes to show you the following information:

→ PS → PTY → RT → Frequency →

**PS (Program Service) :**
While searching, "PS" appears and then the station names will be displayed. "NO PS" appears if no signal is sent.

**PTY (Program Type) :**
While searching, "PTY" appears and then the type of the broadcast program will be displayed. "NO PTY" appears if no signal is sent.

**RT (Radio Text) :**
While searching, "RT" appears and then text messages the station sends will be displayed. "NO RT" appears if no signal is sent.

**Station Frequency :**
Station frequency (non-RDS service.)

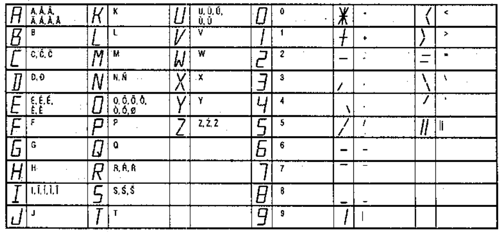
*NOTES:*

- *If searching finishes at once, "PS", "PTY", and "RT" will not appear on the display.*
- *If you press the DISPLAY button or DISPLAY MODE while listening to an AM (MW/LW) station, the display only shows station frequency.*
- *RDS is not available in AM (MW/LW) broadcasts.*

## On characters displayed

When the display shows PS, PTY, or RT signals, the following characters are used.

- The display cannot differentiate upper case and lower case letters and always uses upper case letters.
- The display cannot show accented letters, "A", for instance, may stand for accented "A's" like "Å, Ä, Ã, Á, À, and Â



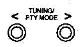
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A | A, Å, Â,<br>Ä, Á, À, Ã | K | K | U | U, Ü, Ú,<br>Ù, Û | 0 | 0 | * | * | ( | < |
| B | B | L | L | V | V | 1 | 1 | + | + | ) | > |
| C | C, Č, Ç | M | M | W | W | 2 | 2 | - | : | = | = |
| D | D, Đ | N | N, Ñ | X | X | 3 | 3 | , | . | \ | \ |
| E | E, È, É,<br>Ê, Ë | O | O, Ô, Ö, Ò,<br>Ó, Õ, Ø | Y | Y | 4 | 4 | \ | . | ' | ' |
| F | F | P | P | Z | Z, Ż, Ž | 5 | 5 | / | / | // | \|\| |
| G | G | Q | Q | | | 6 | 6 | - | - | | |
| H | H | R | R, Ŕ, Ř | | | 7 | 7 | ‾ | ‾ | | |
| I | I, Ì, Í, Ï, Î | S | S, Ś, Š | | | 8 | 8 | _ | _ | | |
| J | J | T | T | | | 9 | 9 | \| | \| | | |

## To search the program by PTY codes

One of the advantages of the RDS service is that you can locate a particular kind of program by specifying the PTY codes.

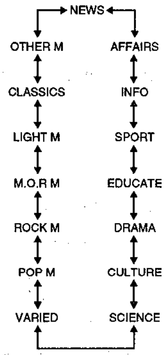
**To search a program using the PTY codes: (Possible only on the front panel)**

1. **Press the PTY SEARCH button while listening to an FM station.**
   The display alternates between "PTY" and "SELECT."
2. **Press the PTY MODE <or> button to select a PTY code.**
   The display gives you the PTY codes described below.
3. **Press the PTY SEARCH button.**
   While searching, the display alternates between "SEARCH" and the selected PTY code. The RX-316RBK searches 40 preset channels, stops when it finds the one you have selected, and tunes in that station.



**To continue searching after the first stop, press the PTY SEARCH button again while the indications on the display blink.**
If no program is found, "NOT FOUND" appears on the display.

**To stop searching any time during the process.**
Using any tuner operating buttons and controls will stop searching.



Descriptions of the PTY codes

| | |
|---|---|
| **NEWS:** | News |
| **AFFAIRS:** | Topical program expanding on the current news or affairs |
| **INFO:** | Programs on medical service, weather forecast, etc. |
| **SPORT:** | Sports events |
| **EDUCATE:** | Educational programs |
| **DRAMA:** | Radio plays |
| **CULTURE:** | Programs on national or regional culture |
| **SCIENCE:** | Programs on natural sciences and technology |
| **VARIED:** | Other programs like comedies or ceremonies |
| **POP M:** | Pop music |
| **ROCK M:** | Rock music |
| **M.O.R. M:** | Middle-of-the-road music (usually called "easy listening") |
| **LIGHT M:** | Light music |
| **CLASSICS:** | Classics |
| **OTHER M:** | Other music |
| **NONE:** | Undefined (this cannot be searched.) |

**When an emergency broadcast (ALARM signal) is sent from an FM station.**
The RX-316RBK automatically switches the source to FM and tunes in the station except in the following cases:

- When you are listening to non-RDS stations (all AM (MW/LW) and some FM stations).
- When the power to the RX-316RBK is turned off.

While receiving an emergency broadcast, "ALARM" appears on the display.

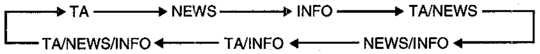
## To switch to a broadcast program of your choice temporarily

Another convenient RDS service is called "EON (Enhanced Other Network)."
This allows the RX-316RBK to switch temporarily to a broadcast program of your choice (NEWS, TA, and/or INFO) from other sources *except in the following cases:*

- When you are listening to a non-RDS station (all AM (MW/LW) and some FM stations).
- When the last received FM station is a non-RDS station.

TA/NEWS/INFO

**To select the program type**
Press the TA/NEWS/INFO button on the front panel
Each time you press the button, the display changes to show the following.



| | |
|---|---|
| TA: | Traffic Announcement |
| NEWS: | News |
| INFO: | Programs on medical service, weather forecast, etc. |

**To use the EON function**
Press the ON/OFF button either on the front panel or EON button on the remote control.
The EON indicator lights up on the display, and the RX-316RBK enters EON standby mode.

**CASE 1** **If there is no station broadcasting the program you have selected**

The RX-316RBK continues playing the current source.

When a station starts broadcasting the program you have selected, the RX-316RBK automatically switches to the station. The EON indicator starts blinking.

When the program is over, the RX-316RBK goes back to the currently selected source, but still remains in EON standby mode.

**CASE 2** **If there is a station broadcasting the program you have selected**

The RX-316RBK stops playing the current source, and tunes in the program. The EON indicator starts blinking.

When the program is over, the RX-316RBK goes back to the currently selected source, but still remains in EON standby mode.

**To stop listening to the program selected by EON**
Press the EON button again so that the EON indicator goes off on the display. The RX-316RBK enters EON off mode and goes back to the currently selected source.
Each time you press the button, the EON mode always alternates between standby mode and off mode.

***NOTES:***

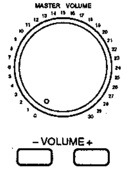
- *In EON standby mode, if you change the source to AM or if you carry out synchronized recording (see page 19), EON standby mode is cancelled temporarily. The RX-316RBK goes back to EON standby mode again when you have finished that operation.*
- *While listening to a program tuned in by the EON function, you can only use the POWER, EON, and DISPLAY buttons.*
- *When the RX-316RBK is turned off, the EON function is also turned off.*

**CAUTION:**
When the source alternates intermittently between the station tuned in by the EON function and the currently selected source, press the EON button to cancel the EON function (the EON indicator off on the display). This is not the malfunction of the RX-316RBK.

# Adjusting the Volume and Tone

## Adjusting the Volume

### Using the MASTER VOLUME Control

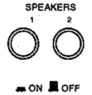


Use the MASTER VOLUME control to adjust the volume from the left and right speakers. Rotating the dial to the right increases the volume. The volume from the speakers and the headphones increases simultaneously.

*NOTE: Volume can also be adjusted using the remote control. Press the VOLUME button marked + to increase the volume, or the VOLUME button marked – to decrease the volume.*

⚠ **CAUTION:** Listening to extremely loud sound may damage your hearing. Be especially careful when using headphones.

### Selecting the Speakers



Pushing in SPEAKER button 1 or 2 activates that pair of speakers. Pressing either button again deactivates that pair of speakers. When the button is in, that pair is activated. You can listen to both pairs, pair 1, pair 2, or neither pair.

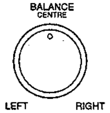
***IMPORTANT!*** *If only one set of speakers is connected, pressing "in" both speaker buttons will produce no sound.*

### Listening to Headphones

Insert the headphone plug into the PHONES jack. To limit sound to the headphones (no sound from the speakers), press SPEAKER buttons 1 and 2 to deactivate all speakers.

⚠ **CAUTION:** To avoid hearing damage, turn the volume down before plugging in the headphones, then gradually increase the volume.

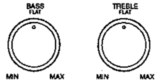
### Adjusting the Left-Right Balance



Use the BALANCE control to adjust the balance between the left and right channels. Rotating the dial to the right decreases the left-channel volume, and rotating it to the left decreases the right-channel volume. The BALANCE control affects both sets of speakers and the headphones.

## Adjusting the Tone

### Adjusting Bass and Treble



Use the BASS control to adjust low pitches and the TREBLE control to adjust high pitches. Turn either control to the right for intensified pitch. Set both controls at the FLAT position for normal listening.

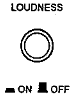
### Enjoying the Surround Sound Effect

Press the SURROUND button to create this movie-theater effect. The SURROUND indicator lights. Press the SURROUND button again to deactivate the surround feature. The SURROUND indicator turns off.

***IMPORTANT!*** *The Surround feature has no effect on monaural (non-stereo) sources.*

*NOTE: Two set of speakers are recommended to produce an ideal surround effect, but you can use the feature with only one set of speakers connected.*

## Listening at Low Volume *(Loudness)*

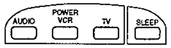


Human ears are not sensitive to bass at low volume. To compensate for this, the loudness function automatically boosts the bass level as you lower the volume.

To use the loudness function, press the LOUDNESS button.

To turn the function off, press the LOUDNESS button again.

## Using the Sleep Timer



The sleep timer lets you listen to any program for up to 80 minutes before it automatically shuts off. The receiver goes back to standby mode (off) after the time period that you specify. To use the sleep timer:

**Step 1** Press the SLEEP button on the remote control.

"SLEEP" appears in the display window.

***IMPORTANT!*** *You have 5 seconds to proceed to the next step. If you wait more than 5 seconds, return to step 1.*

**Step 2** Press the SLEEP button again to set the timer.

Each time you press the SLEEP button, the time limit is extended 10 minutes. You can set up to 80 minutes.

**Step 3** Stop when you reach the desired time period.

To set time indicator disappears after a few seconds. The receiver will automatically return to standby mode (off) after the time period you specified.

*NOTES:*

- *After setting the sleep timer, you can change sources as often as you wish within the specified time period.*
- *After setting the sleep timer, you can check the remaining time in minutes by pressing the SLEEP button. You can extend the time period further, in 10-minute increments, by pressing the SLEEP button again.*

# Operating Audio Components

## COMPU LINK Remote Control System

The COMPU LINK remote control system lets you operate the receiver and JVC components from the remote supplied with this receiver. Control signals for JVC audio components are preset in the receiver's remote control.

Connecting the COMPU LINK-3 SYNCHRO jacks on the back of the receiver will allow you to use the four functions below.

### Remote Control

You can control all components via the REMOTE SENSOR on the receiver using the receiver's remote control. For details, see page 20.

***IMPORTANT!*** *Point the remote control directly at the REMOTE SENSOR on the receiver.*

### Automatic Source Selection

When you *press play* on a component or the remote, the component begins playing immediately. On the other hand, if you select a *new source* on the receiver or the remote, the component begins playing immediately, but the previously selected source continues playing without sound for a few seconds.

### Synchronized Recording

Synchronized recording means the tape deck starts recording as soon as a CD or record begins playing.

To use synchronized recording, follow these steps:

**Step 1** Put a tape in the deck, and a disc in the CD player or on the turntable.

**Step 2** Press the REC and PAUSE button on the tape deck at the same time. This puts the tape deck in the REC/PAUSE state.

***IMPORTANT!*** *If you do not press the REC button and PAUSE button together, the synchronized recording feature will not operate.*

**Step 3** Press the PLAY button on the CD player or turntable.

As soon as the disc starts playing, the tape deck starts recording. When the disc ends, the tape deck switches back to the REC/PAUSE mode, and stops 4 seconds later.

*NOTES:*

- *During synchronized recording, the CD or PHONO button is activated. Other SOURCE buttons are disabled to prevent recording failure.*
- *If your CD player is operated in the PROGRAM mode, a 4-second mute is recorded between tracks to enable the music scan feature of your tape deck to work.*
- *If the power of any component is shut off during synchronized recording, the system will not operate properly. In this case, you must start again with step 1.*

### Automatic Power ON/OFF

The CD player and cassette deck are turned on and off along with the receiver. When you turn on the receiver (using either the remote or the receiver's POWER switch), the CD player or cassette deck will turn on automatically, depending which component was previously selected.

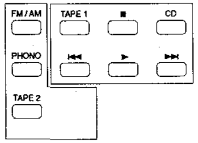
*NOTE: This function has been added to COMPU LINK-3 (Enhanced COMPU LINK), an upgraded version of COMPU LINK-1. Refer to your JVC component manual for details.*

## Using the Remote Control

By connecting the COMPU LINK jack to this receiver, you can operate the audio stereo component with this receiver's remote control. In addition, if your VCR is a JVC product, you can operate it with this receiver's remote control.

*NOTE: The VCR does not work with the COMPU LINK remote control system. When you operate the VCR, you must aim the remote control at the VCR instead of the receiver.*

### Operating the Component Already Selected

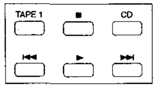


Select a source with the SOURCE SELECT buttons on the remote control. Operate that source using the buttons below the SOURCE SELECT buttons.

***IMPORTANT!*** *If you choose a source on the receiver directly, the remote control will not operate that source. To operate a source with the remote control, the source must be selected using the remote control.*

***IMPORTANT!*** *When you select CD, TAPE 1, FM, AM or PHONO on the remote control, the component will turn on and start playing automatically.*

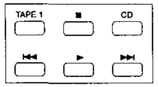
### CD Player



After pressing the CD button, you can perform the following operations on the remote:

| | |
|---|---|
| ▶ | Starts playing |
| ⏮ | Skips to the beginning of the previous track |
| ⏭ | Skips to the beginning of the next track |
| ■ | Stops playing |

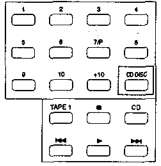
### Cassette Deck



After pressing the TAPE 1 button, you can perform the following operations on the remote:

| | |
|---|---|
| ▶ | Starts playback |
| ■ | Stops operation |
| ⏮ | Fast wind the tape from right to left |
| ⏭ | Fast wind the tape from left to right |

### Operating the Component Not Currently Selected

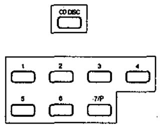


When you want to operate one component while listening to another component (e.g., recording from a CD), use the buttons in the CONTROL section of the remote control. The CONTROL buttons allow you to use the operation buttons for the new component without affecting the component already playing.

*NOTE: You can also turn the VCR and TV on and off by pressing the VCR or TV button in the POWER section of the remote control.*

***IMPORTANT!*** *Aim the remote control at the VCR or TV, not at the receiver.*

### CD Player-Changer



After pressing the CD DISC button in the CONTROL section of the remote, you can perform the following operations on the remote:

**1-6, P** Select the number of the disk installed in the CD player-changer. Then continue to operate the CD player as shown on page 20.

## Troubleshooting

Use this chart to help you solve everyday operational problems. If there is any problem you cannot solve, contact your JVC service center.

| PROBLEM | POSSIBLE CAUSE | SOLUTION |
|---|---|---|
| Display window does not light up | Power cord not plugged in | Plug power cord into AC socket |
| No sound from speakers | Speaker wires not connected | Check speaker wiring and reconnect if necessary |
| | SPEAKERS buttons not set correctly | Push the SPEAKERSbuttons in or out as desired |
| | Incorrect SOURCE button was pressed | Select the correct audio source |
| Sound from one speaker only | Speaker wires not connected properly | Check speaker wiring and reconnect if necessary |
| | Balance control is set to one extreme | Adjust BALANCE control so that both speakers have sound |
| Continuous hiss or buzzing during FM reception | Incoming signal is too weak | Adjust antenna |
| | Station is too far away | Select a new station |
| | Incorrect antenna used | Check with your dealer to be sure you have the correct antenna |
| | Antenna not connected properly | Check connections |
| Occasional cracking noise during FM reception | Ignition noise from automobiles | Move the antenna farther from automobile traffic |
| Howling during record playing | Turntable too close to speaker | Move speakers away from turntable |
| Remote control does not work | There is an obstruction in front of the REMOTE SENSOR on the receiver | Remove the obstruction |
| | Batteries are weak | Replace batteries |

# *Specifications*

## Amplifier

| | |
|---|---|
| **Output Power** | |
| **Europe and Australia** | 90 watts per channel, min. RMS, both channels driven into 4 ohms at 1 kHz with no more than 0.9% total harmonic distortion (IEC268-3/DIN).<br>65 watts per channel, min. RMS, both channels driven into 8 ohms at 1 kHz with no more than 0.9% total harmonic distortion (IEC268-3/DIN).<br>55 watts per channel, min. RMS, both channels driven into 8 ohms from 40 Hz to 20 kHz, with no more than 0.08% total harmonic distortion. |
| **Total Harmonic Distortion (8 ohms, 1 kHz)** | 0.08%* at 55 watts output |
| **Frequency Response (8 ohms)** | |
| PHONO | 20 Hz to 20 kHz (±1 dB) |
| CD / TAPE 1 / TAPE 2 | 20 Hz to 20 kHz (±1 dB) |
| **Signal-to-Noise Ratio ('66 IHF / DIN)** | |
| PHONO | 70 dB / 66 dB |
| CD / TAPE 1 / TAPE 2 | 91 dB/ 67 dB |
| **RIAA Phono Equalization** | ±1 dB (20 Hz to 20 kHz) |
| **Input Sensitivity / Impedance (1 kHz)** | |
| PHONO | 2.5 mV / 47 k ohms |
| CD / TAPE 1 / TAPE 2 | 200 mV / 47 k ohms |
| **Output Level** | |
| TAPE 1 / TAPE 2 | 200 mV |
| **Tone Control Range** | BASS (at 100 Hz) ±8 dB<br>TREBLE (at 10 kHz) ±8 dB |
| **Loudness Control** | +4.5 dB (at 100 Hz)<br>(Volume control at –30 dB) |

## FM Tuner (IHF)

| | |
|---|---|
| **Tuning Range** | 87.5 MHz to 108.0 MHz |
| **Usable Sensitivity** | 10.8 dBf (0.95 µV / 75 ohms) |
| **50 dB Quieting Sensitivity** | |
| Monaural | 16.3 dBf (1.8 µV / 75 ohms) |
| Stereo | 38.3 dBf (22.5 µV / 75 ohms) |
| **Signal-to-Noise Ratio (IHF-A weighted)** | |
| Monaural | 80 dB at 85 dBf |
| Stereo | 73 dB at 85 dBf |
| **Total Harmonic Distortion (IHF)** | |
| Monaural | 0.15 % at 1 kHz |
| Stereo | 0.2 % at 1 kHz |
| **Stereo Separation at REC OUT** | 40 dB at 1 kHz |
| **Capture Ratio (IHF)** | 1.5 dB (10 mV / 300 ohms) |
| **Alternate Channel Selectivity (IHF)** | 60 dB (±400 kHz) |
| **Frequency Response** | 30 Hz to 15 kHz: (+0.5 dB, –3 dB) |

## MW Tuner

| | |
|---|---|
| **Tuning Range** | 522 kHz to 1,629 kHz (MW)<br>144 kHz to 288 kHz (LW) |
| **Usable Sensitivity** | |
| Loop antenna | 300µV/m |
| External antenna | 30µV |
| **Signal-to-Noise Ratio** | 50 dB (100mV/m) |

## LW Tuner

| | |
|---|---|
| **Usable Sensitivity** | |
| Loop antenna | 600µV/m |
| External antenna | 100µV |

## General

| | |
|---|---|
| **Power Requirements** | AC 230V ∿ , 50 Hz |
| **Power Consumption** | 220 watts (at operation)<br>3 watts (at standby mode) |
| **Dimensions (W x H x D)** | 17 3/16 x 5 x 14 1/16 inches<br>435 x 126 x 356 mm |
| **Mass** | 19.8 lbs<br>9.0 kg |

* Measured by JVC Audio Analysis System.

** Measured at 999 kHz (MW), at 245 kHz (LW).

Supplied Accessories

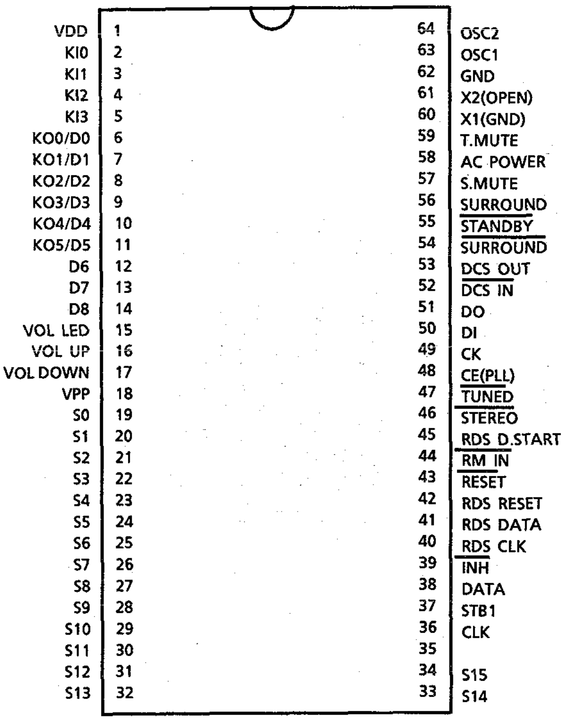
| | |
|---|---|
| Remote control unit (RM-SR316RU) | 1 |
| Batteries R6P(SUM-3)/AA(15F) | 2 |
| AM(MW/LW) loop antenna | 1 |
| FM wire antenna (only for Germany) | 1 |
| FM feeder antenna (except for Germany) | 1 |
| Antenna adaptor (except for Germany) | 1 |
| Mains plug (only for the U.K.) | 1 |

Designs and specifications subject to change without notice.

# Description of ICs

## ■ MN171202J5C (IC401) : System controller

### 1.Terminal Layout


VDD 1
KI0 2
KI1 3
KI2 4
KI3 5
KO0/D0 6
KO1/D1 7
KO2/D2 8
KO3/D3 9
KO4/D4 10
KO5/D5 11
D6 12
D7 13
D8 14
VOL LED 15
VOL UP 16
VOL DOWN 17
VPP 18
S0 19
S1 20
S2 21
S3 22
S4 23
S5 24
S6 25
S7 26
S8 27
S9 28
S10 29
S11 30
S12 31
S13 32
64 OSC2
63 OSC1
62 GND
61 X2(OPEN)
60 X1(GND)
59 T.MUTE
58 AC POWER
57 S.MUTE
56 SURROUND
55 STANDBY
54 SURROUND
53 DCS OUT
52 DCS IN
51 DO
50 DI
49 CK
48 CE(PLL)
47 TUNED
46 STEREO
45 RDS D.START
44 RM IN
43 RESET
42 RDS RESET
41 RDS DATA
40 RDS CLK
39 INH
38 DATA
37 STB1
36 CLK
35
34 S15
33 S14

### 2.Key Matrix

| | KEY IN 0 | KEY IN 1 | KEY IN 2 | KEY IN 3 |
|---|---|---|---|---|
| KEY OUT 0 | POWER | CD | PHONO | TAPE1 |
| KEY OUT 1 | PRESET + | TUNING + | FM | AM |
| KEY OUT 2 | PRESET – | TUNING – | FM MODE /MUTE | MEMORY |
| KEY OUT 3 | -- | SURROUND | TAPE2 /TV SOUND | -- |
| KEY OUT 4 | EON | EON TA/NEWS /INFO | DISPLAY | PTY ON/OFF |

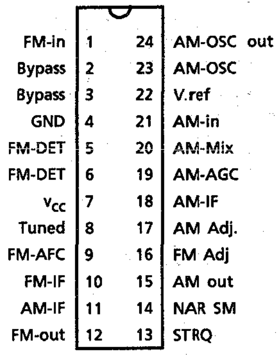
### 3.Pin Function

| Pin No. | Symbol | I/O | Function and Operations | Pin No. | Symbol | I/O | Function and Operations |
|---|---|---|---|---|---|---|---|
| 1 | VDD | -- | Power supply | 33 | S14 | O | Segment control signal |
| 2 | KI0 | I | Key matrix in | 34 | S15 | O | Segment control signal |
| 3 | KI1 | I | Key matrix in | 35 | | -- | Not used |
| 4 | KI2 | I | Key matrix in | 36 | CLK | O | Clock output for IC321 |
| 5 | KI3 | I | Key matrix in | 37 | STB1 | O | Strobe signal for IC321 |
| 6 | D0/KO0 | O | Grid control signal (Key matrix out) | 38 | DATA | O | Data for IC321 |
| 7 | D1/KO1 | O | Grid control signal (Key matrix out) | 39 | INH | I | Inhibit signal input |
| 8 | D2/KO2 | O | Grid control signal (Key matrix out) | 40 | RDS CLK | O | Clock output for IC201 |
| 9 | D3/KO3 | O | Grid control signal (Key matrix out) | 41 | RDS DATA | O | Strobe signal for IC201 |
| 10 | D4/KO4 | O | Grid control signal (Key matrix out) | 42 | RDS RESET | O | Reset signal for IC201 |
| 11 | D5/KO5 | O | Grid control signal (Key matrix out) | 43 | RESET | I | Reset signal input |
| 12 | D6 | O | Grid control signal | 44 | RM IN | I | Detection for protector |
| 13 | D7 | O | Grid control signal | 45 | RDS D.START | O | D.Start signal for IC201 |
| 14 | D8 | O | Grid control signal | 46 | STEREO | I | STEREO indication control |
| 15 | VOL LED | O | Volume indication control | 47 | TUNED | I | TUNED indication control |
| 16 | VOL UP | O | Volume control signal | 48 | CE | O | Chip select signal for IC102 |
| 17 | VOL DOWN | O | Volume control signal | 49 | CK | O | Clock output for IC102 |
| 18 | VPP | -- | Power supply for FL display | 50 | DI | I | Data to IC102 |
| 19 | S0 | O | Segment control signal | 51 | DO | O | Data for IC102 |
| 20 | S1 | O | Segment control signal | 52 | DCS IN | I | Compulink signal input |
| 21 | S2 | O | Segment control signal | 53 | DCS OUT | O | Compulink signal output |
| 22 | S3 | O | Segment control signal | 54 | SURROUND | O | SURROUND indicator signal output |
| 23 | S4 | O | Segment control signal | 55 | STANDBY | O | STANDBY indicator signal output |
| 24 | S5 | O | Segment control signal | 56 | SURROUND | O | SURROUND on signal output |
| 25 | S6 | O | Segment control signal | 57 | S.MUTE | O | Muting signal when changing the source |
| 26 | S7 | O | Segment control signal | 58 | AC POWER | O | RY001 control signal |
| 27 | S8 | O | Segment control signal | 59 | T.MUTE | O | Tuner muting control signal |
| 28 | S9 | O | Segment control signal | 60 | X1 | -- | Connected to GND |
| 29 | S10 | O | Segment control signal | 61 | X2 | -- | Non connection |
| 30 | S11 | O | Segment control signal | 62 | GND | -- | GND |
| 31 | S12 | O | Segment control signal | 63 | OSC1 | -- | Oscillation terminal |
| 32 | S13 | O | Segment control signal | 64 | OSC2 | -- | Oscillation terminal |

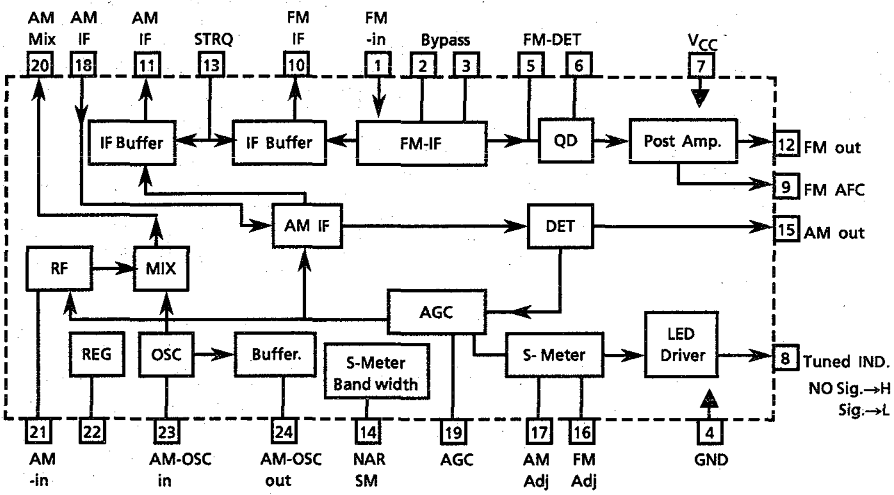
## ■ LA1266A ( IC104 ) : FM AM IF AMP & detector

1. The main function descriptions
   (1) Amplify and detect of FM intermediate frequencies.
   (2) It has local oscillator and mixer for AM, and detect the AM-IF signal.

### 2. Terminal Layout


FM-in 1
Bypass 2
Bypass 3
GND 4
FM-DET 5
FM-DET 6
$V_{CC}$ 7
Tuned 8
FM-AFC 9
FM-IF 10
AM-IF 11
FM-out 12
24 AM-OSC out
23 AM-OSC
22 V.ref
21 AM-in
20 AM-Mix
19 AM-AGC
18 AM-IF
17 AM Adj.
16 FM Adj
15 AM out
14 NAR SM
13 STRQ

### 3. Block Diagram


AM Mix 20
AM IF 18
AM IF 11
STRQ 13
FM IF 10
FM -in 1
Bypass 2 3
FM-DET 5 6
$V_{CC}$ 7
IF Buffer
IF Buffer
FM-IF
QD
Post Amp.
12 FM out
9 FM AFC
AM IF
DET
15 AM out
RF
MIX
AGC
REG
OSC
Buffer.
S-Meter Band width
S- Meter
LED Driver
8 Tuned IND.
NO Sig.→H
Sig.→L
21 AM -in
22
23 AM-OSC in
24 AM-OSC out
14 NAR SM
19 AGC
17 AM Adj
16 FM Adj
4 GND

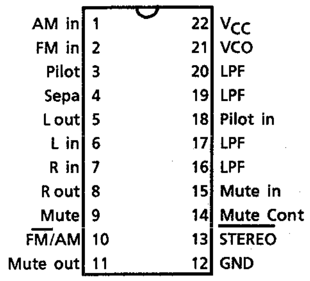
### 4. Pin Function

| Pin No. | Symbol | I/O | Functions and Operations |
|---|---|---|---|
| 1 | FM in | I | This is an input terminal of FM IF Signal. |
| 2,3 | Bypass | -- | Bypass of FM IF Amp. |
| 4 | GND | -- | This is the device ground terminal. |
| 5,6 | FM DET | -- | FM detect transformer. |
| 7 | $V_{CC}$ | -- | This is the power supply terminal. |
| 8 | Tuned | O | When the set is tunning ,this terminal become "L". |
| 9 | FM AFC | O | This is an output terminal of voltage for FM - AFC. |
| 10 | FM IF out | O | When the signal of IF REQ of IC102( LC7218 ) applied to pin17, the signal of FM IF does output. |
| 11 | AM IF out | O | When the signal of IF REQ of IC102( LC7218 ) applied to pin17, the signal of AM IF does output. |
| 12 | FM out | O | FM detection output. |
| 13 | STRQ | I | The IF-signals come out from pin10 (FM-IF) or pin11 (AM-IF) while this terminal going to "High". |
| 14 | NAR SM | -- | Control the Band-width of signal meter. |
| 15 | AM out | O | AM detection output. |
| 16 | FM Adj | -- | For adjust the stop level (or mute level) of FM. |
| 17 | AM Adj | -- | For adjust the stop level (or mute level) of AM. |
| 18 | AM-IF | I | Input of AM IF Signal. |
| 19 | AM-AGC | I | This is an AGC voltage Input terminal for AM. |
| 20 | AM-MIX | O | This is an output terminal for AM mixer. |
| 21 | AM-IN | I | This is an input terminal for AM RF Signal. |
| 22 | V.REF | -- | Register value between pin9 and pin22 desides the frequency width of the input signal. |
| 23 | AM-OSC | -- | This is a terminal of AM Local oscillation circuit. |
| 24 | AM-OSC out | O | AM Local Oscillation Signal output. |

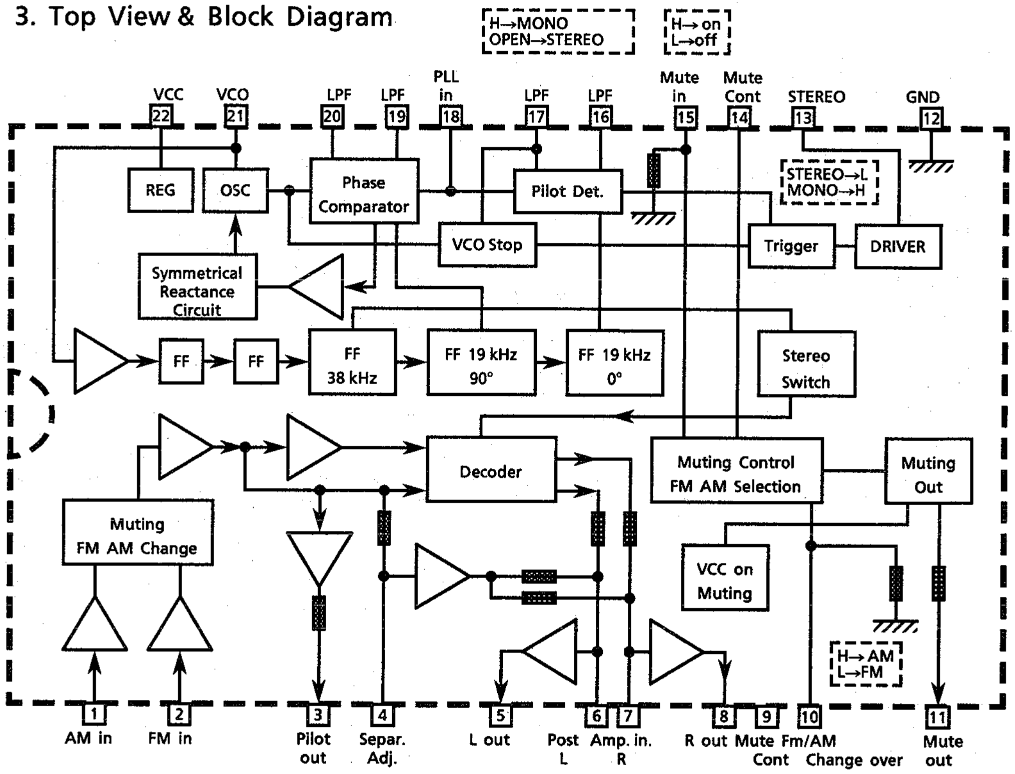
## ■ LA3401 (IC105) : FM MPX Detector

1. The main function descriptions
   (1) Detect the FM Multiplex Signal (Stereo signal).
   (2) When receiving FM Stereo Signal, it outputs the signal for indicator.
   (3) AM / FM Audio Amplifier.

### 2. Terminal Layout


AM in 1
FM in 2
Pilot 3
Sepa 4
L out 5
L in 6
R in 7
R out 8
Mute 9
FM/AM 10
Mute out 11
22 $V_{CC}$
21 VCO
20 LPF
19 LPF
18 Pilot in
17 LPF
16 LPF
15 Mute in
14 Mute Cont
13 STEREO
12 GND

### 3. Top View & Block Diagram


H→MONO
OPEN→STEREO
H→on
L→off
VCC 22
VCO 21
LPF 20
LPF 19
PLL in 18
LPF 17
LPF 16
Mute in 15
Mute Cont 14
STEREO 13
GND 12
REG
OSC
Phase Comparator
Pilot Det.
STEREO→L
MONO→H
VCO Stop
Trigger
DRIVER
Symmetrical Reactance Circuit
FF
FF
FF 38 kHz
FF 19 kHz 90°
FF 19 kHz 0°
Stereo Switch
Decoder
Muting Control FM AM Selection
Muting Out
Muting FM AM Change
VCC on Muting
H→AM
L→FM
1 AM in
2 FM in
3 Pilot out
4 Separ. Adj.
5 L out
6 Post L
7 Amp. in. R
8 R out
9 Mute Cont
10 Fm/AM Change over
11 Mute out

### 4. Pin Function

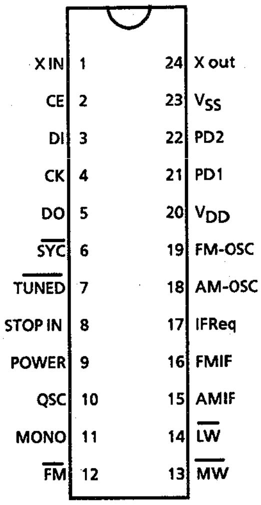
| Pin No. | Symbol | I/O | Functions and Operations |
|---|---|---|---|
| 1 | AM in | I | This is an input terminal for AM detection signal. |
| 2 | FM in | I | This is an input terminal for FM detection signal. |
| 3 | Pilot out | O | Output of MPX pilot signal (Connect to Pin18). |
| 4 | Sepa. Adj. | -- | Separation adjustment. |
| 5 | L. out | O | Left channel signal output. |
| 6 | L | O | Reversal output of Pin5. |
| 7 | R | O | Reversal output of Pin8. |
| 8 | R out | O | Right channel signal output |
| 9 | Mute Cont | -- | Not used. |
| 10 | FM / AM | I | Change over the FM / AM input. "H" : AM, "L" : FM |
| 11 | Mute out | --- | Not used. |
| 12 | GND | -- | Ground terminal. |
| 13 | Stereo | O | Stereo indicator output. Stereo : "L", Mono : "H" |
| 14 | Mute Cont | -- | The mute time is controlled by the connected capacitor when changing over the FM / AM . |
| 15 | Mute in | I | Mute signal input. "H" : Mute on, "L" : Mute off. |
| 16 | LPF | -- | Low pass filter of pilot detector. |
| 17 | LPF | -- | While this terminal goes to "H", the VCO stop. |
| 18 | Pilot in | I | Pilot signal input. |
| 19 | LPF | -- | Low-pass filter of PLL. |
| 20 | LPF | -- | Low-pass filter of PLL. |
| 21 | VCO | I | Voltage controlled oscillator terminal. |
| 22 | $V_{CC}$ | -- | Power supply. |

## ■ LC7218 (IC102) : PLL Synthesizer

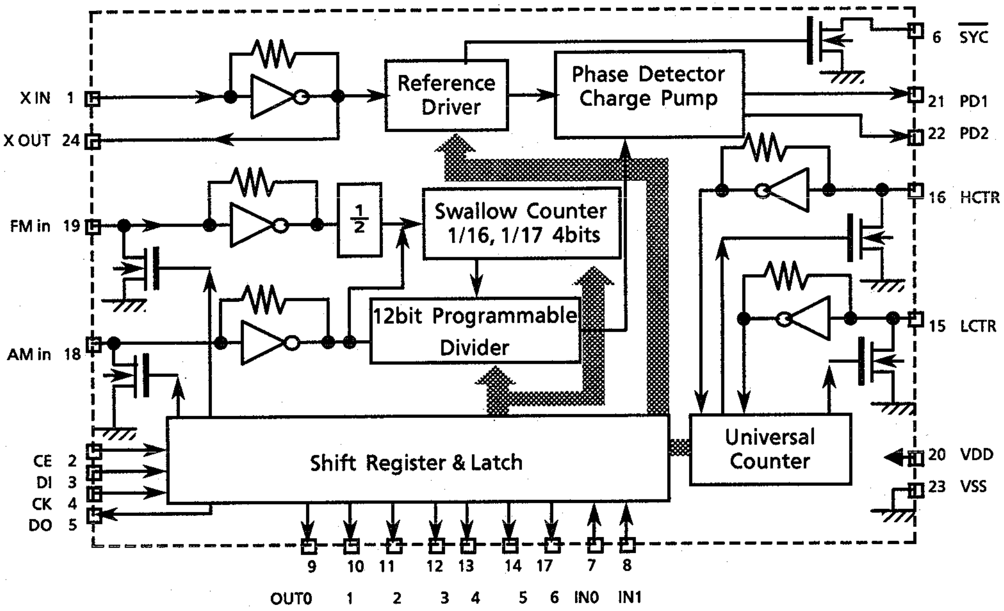
### 1. The main function descriptions

(1) It makes the local oscillation frequency by the control data from IC401.
(2) Decode the control signal and transmit the signal for receiving conditions.
(3) For the best tuning, count the internal-frequency and transmit the data to IC401.

### 2. Terminal Layout


XIN 1
CE 2
DI 3
CK 4
DO 5
SYC 6
TUNED 7
STOP IN 8
POWER 9
QSC 10
MONO 11
FM 12
24 X out
23 VSS
22 PD2
21 PD1
20 VDD
19 FM-OSC
18 AM-OSC
17 IFReq
16 FMIF
15 AMIF
14 LW
13 MW

### 3. Block Diagram


XIN 1
X OUT 24
FM in 19
AM in 18
CE 2
DI 3
CK 4
DO 5
Reference Driver
Phase Detector Charge Pump
1/2
Swallow Counter 1/16, 1/17 4bits
12bit Programmable Divider
Shift Register & Latch
Universal Counter
6 SYC
21 PD1
22 PD2
16 HCTR
15 LCTR
20 VDD
23 VSS
9 10 11 12 13 14 17 7 8
OUT0 1 2 3 4 5 6 IN0 IN1

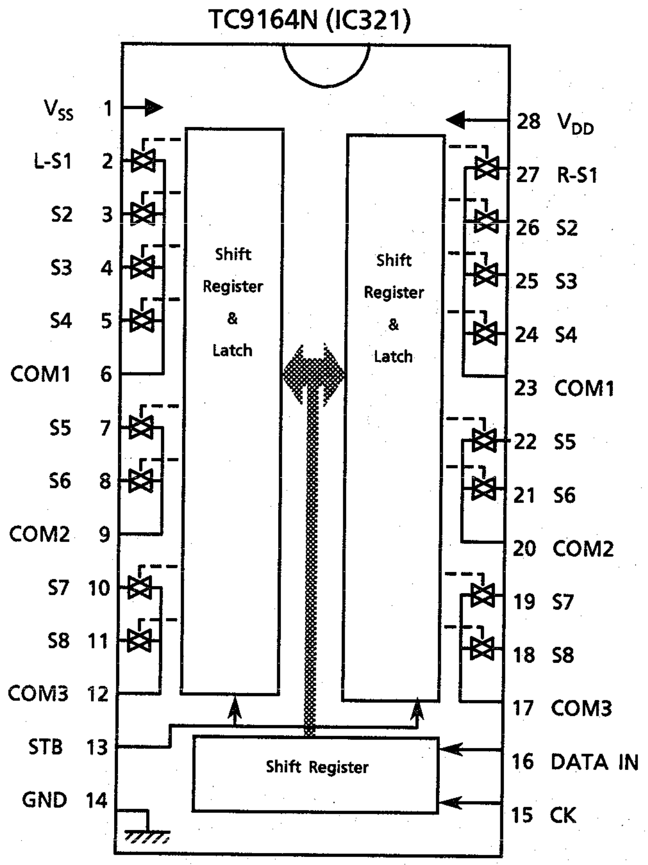
### 4. Pin Function

| Pin No. | Symbol | I/O | Functions and Operations |
|---|---|---|---|
| 1,24 | X in , X out | I/O | Crystal oscillator (7.2MHz). |
| 2 | CE | I | Fix the chip enable to "H" when inputting (DI) and outputting (DO) the serial data. |
| 3 | DI | I | Receive the control data from the controller (IC401). |
| 4 | CK | I | This clock is used to synchronize data when transmitting the data of DI and DO. |
| 5 | DO | O | Transmit the data from LC7218 to the controller which is synchronized with CK. |
| 6 | SYC | — | Not used. |
| 7 | Tuned | I | Receive the tuned signal from IC104 (LA1266A). |
| 8 | Stop in | — | Connect to GND. |
| 9 | POWER | — | Not used. |
| 10 | QSC | — | Not used. |
| 11 | MONO | O | It is "H" on FM-monaural, "L" on FM-Stereo. |
| 12 | FM | O | It is "L" on FM mode. |
| 13 | MW | O | It is "L" on MW mode. |
| 14 | LW | O | It is "L" on LW mode. |
| 15 | AM-IF | I | Universal counter input for AM-IF from IC104 (LA1266A). |
| 16 | FM-IF | I | Universal counter input for FM-IF from IC104(LA1266A). |
| 17 | IF REQ | O | Output the "IF-signal request" to IC104 when the pin-7 (tuned in) goes to "H". |
| 18 | AM OSC | I | Input the local oscillator signal of AM. |
| 19 | FM OSC | I | Input the local oscillator signal of FM. |
| 20 | $V_{DD}$ | — | This is a terminal of power supply. |
| 21 | PD1 | O | PLL charge pump output: When the local oscillator signal frequency is higher than the reference frequency high level signals will output. When it is lower than the reference frequency, low level signals will output. When it is same as reference frequency signals, it will be floating. |
| 22 | PD2 | — | Not used. |
| 23 | Vss | — | Connect to GND. |

## ■ TC9164N (IC321) : Analog Switch

1. Functions
   These analog switches are controlled by 14 bit serial date from computer for selecting the source.

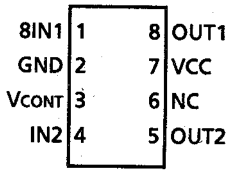
2. Terminal Layout & Block diagram


TC9164N (IC321)
VSS 1
L-S1 2
S2 3
S3 4
S4 5
COM1 6
S5 7
S6 8
COM2 9
S7 10
S8 11
COM3 12
STB 13
GND 14
28 VDD
27 R-S1
26 S2
25 S3
24 S4
23 COM1
22 S5
21 S6
20 COM2
19 S7
18 S8
17 COM3
16 DATA IN
15 CK
Shift Register & Latch
Shift Register & Latch
Shift Register

3. First 10bits are used to source select. Last 4bits are chip select. The switches (S1~S8) are connected to common terminals (COM1~COM3) according to the DATA from computer.

| | Switch Select bit | | | | | | | | CH1 (R-S1~S8) | CH2 (L-S1~S8) | Chip Select bit | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | S13 | S14 |
| TC9164N | The switch is ON when the data is "1". | | | | | | | | | | 0 | 1 | 0 | 0 |

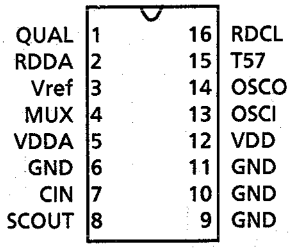
## ■ LB1639 (IC361) : Motor Driver


8IN1 1
GND 2
VCONT 3
IN2 4
8 OUT1
7 VCC
6 NC
5 OUT2

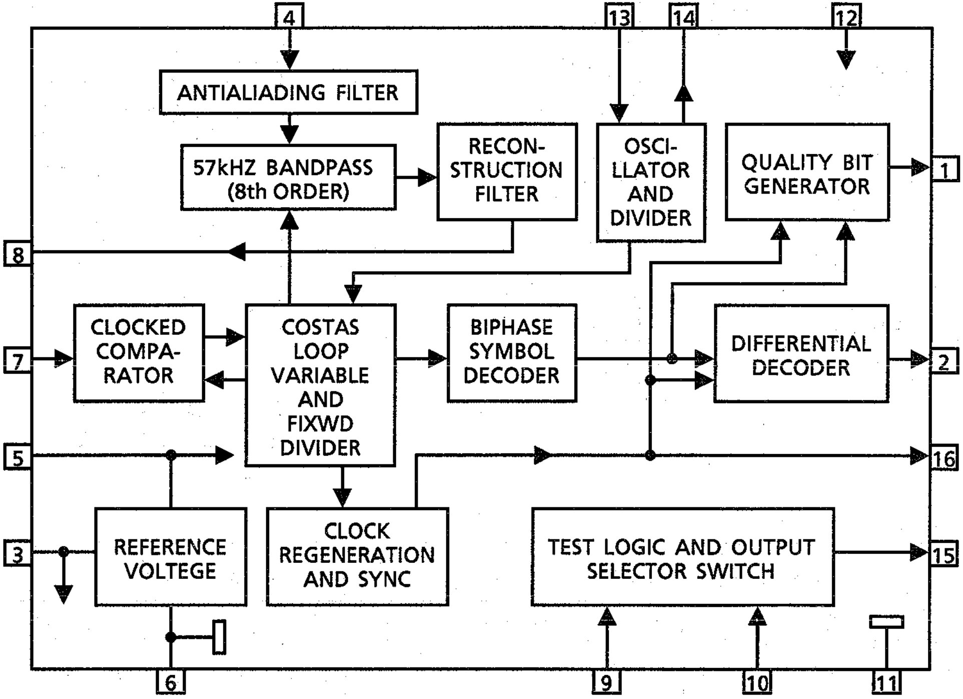
| IN 1 | IN 2 | OUT 1 | OUT 2 | MOTOR |
|---|---|---|---|---|
| H | L | H | L | CLOCKWISE |
| L | H | L | H | COUNTER-CLOCKWISE |
| H | H | OFF | OFF | WAITING |
| L | L | OFF | OFF | WAITING |

## ■ SAA6579 (IC202) : Radio data system demodulator

### 1. Terminal Layout


QUAL 1
RDDA 2
Vref 3
MUX 4
VDDA 5
GND 6
CIN 7
SCOUT 8
16 RDCL
15 T57
14 OSCO
13 OSCI
12 VDD
11 GND
10 GND
9 GND

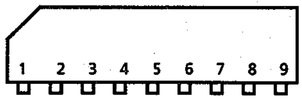
### 2. Block Diagram

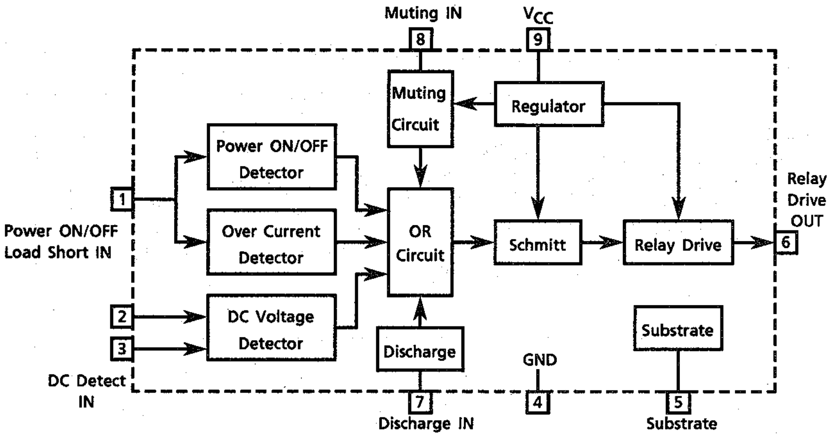

4
13
14
12
ANTIALIADING FILTER
57kHZ BANDPASS (8th ORDER)
RECON-STRUCTION FILTER
OSCI-LLATOR AND DIVIDER
QUALITY BIT GENERATOR
1
8
7
CLOCKED COMPA-RATOR
COSTAS LOOP VARIABLE AND FIXWD DIVIDER
BIPHASE SYMBOL DECODER
DIFFERENTIAL DECODER
2
5
16
3
REFERENCE VOLTEGE
CLOCK REGENERATION AND SYNC
TEST LOGIC AND OUTPUT SELECTOR SWITCH
15
6
9
10
11

### 3. Pin Function

| Pin No. | Symbol | I/O | Functions & Operations | Pin No. | Symbol | I/O | Function & Operations |
|---|---|---|---|---|---|---|---|
| 1 | QUAL | — | Non connection | 8 | SCOUT | O | Subcarrier output of reconstruction filter |
| 2 | RDDA | O | RDS data output | 9~11 | GND | — | Ground for digital part (0V) |
| 3 | Vref | O | Reference voltage output | 12 | VDD | — | +5V supply voltage for digital part |
| 4 | MUX | I | Multiplex signal input | 13 | OSCI | I | Oscillator input |
| 5 | VDDA | — | +5V supply voltage for analog part | 14 | OSCO | O | Oscillator output |
| 6 | GND | — | Ground for analog part (0V) | 15 | T57 | — | Non connection |
| 7 | CIN | I | Subcarrier input to comparator | 16 | RDCL | O | RDS clock output |

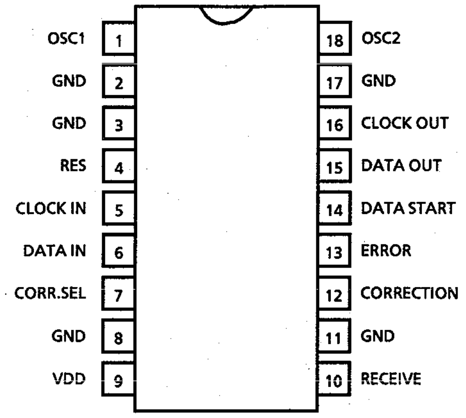
## ■ TA7317P (IC901) : PROTECTOR



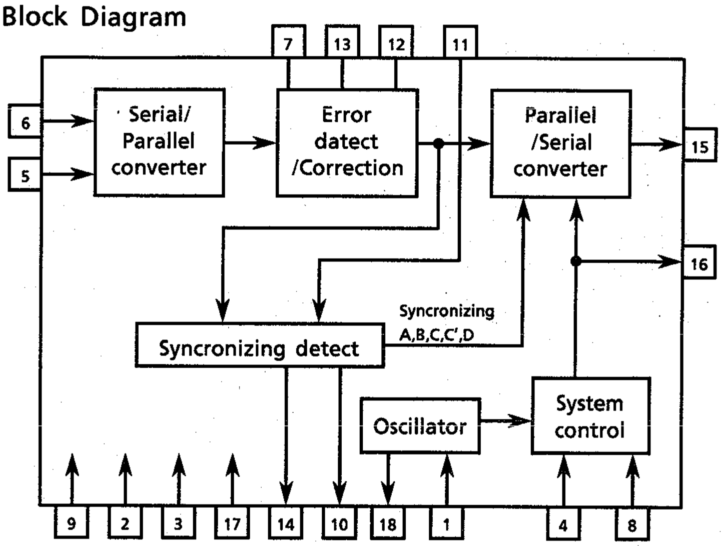

Muting IN
8
VCC
9
Muting Circuit
Regulator
Power ON/OFF Detector
Over Current Detector
DC Voltage Detector
OR Circuit
Schmitt
Relay Drive
Relay Drive OUT
6
1
Power ON/OFF Load Short IN
2
3
DC Detect IN
Discharge
Substrate
GND
7
Discharge IN
4
5
Substrate

## ■ LC7073 ( IC201) : Radio Data System

### 1. Terminal Layout


OSC1 1
GND 2
GND 3
RES 4
CLOCK IN 5
DATA IN 6
CORR.SEL 7
GND 8
VDD 9
18 OSC2
17 GND
16 CLOCK OUT
15 DATA OUT
14 DATA START
13 ERROR
12 CORRECTION
11 GND
10 RECEIVE

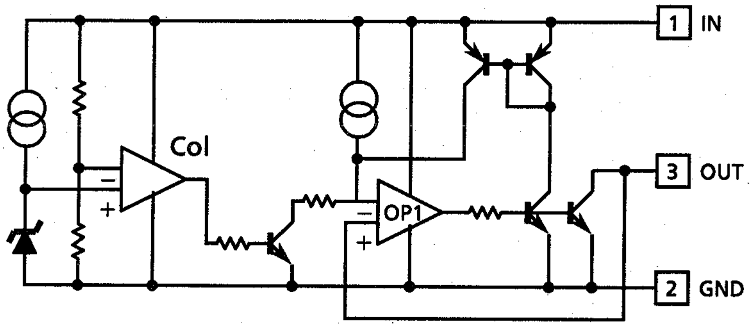
### 2. Block Diagram


7
13
12
11
6
5
Serial/ Parallel converter
Error datect /Correction
Parallel /Serial converter
15
16
Syncronizing A,B,C,C',D
Syncronizing detect
Oscillator
System control
9
2
3
17
14
10
18
1
4
8

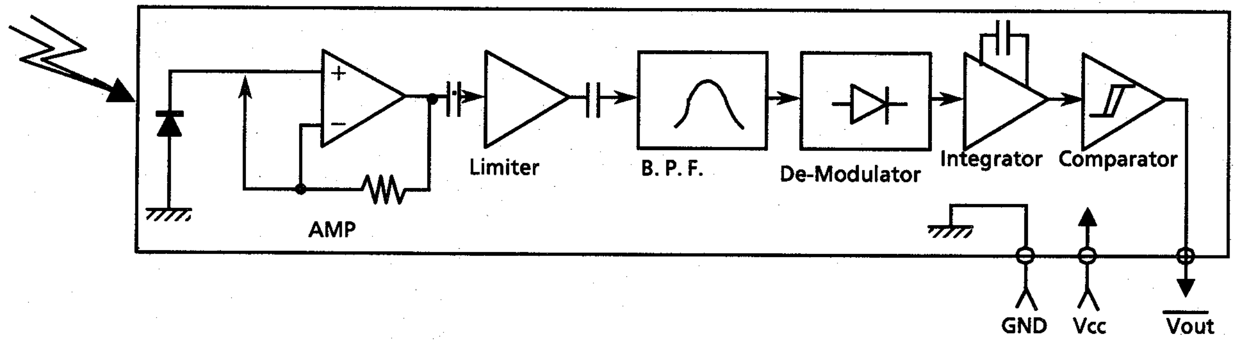
### 3. Pin Function

| Pin No. | Symbol | I/O | Functions & Operations | Pin No. | Symbol | I/O | Functions & Operations |
|---|---|---|---|---|---|---|---|
| 1,18 | OSC1,OSC2 | I/O | Oscillation terminal | 10 | RECEIVE | — | Non connection |
| 2,3,8,<br>11,17 | GND | — | GND | 12 | CORRECTION | — | Non connection |
| 4 | RES | I | Reset input | 13 | ERRDR | — | Non connection |
| 5 | CLOCK IN | I | RDS clock input | 14 | DATA START | O | Data start signal for block data to output serial data. |
| 6 | DATA IN | I | RDS data input | 15 | DATA OUT | O | Serial data output |
| 7 | CORR.SEL | I | Non connection | 16 | CLOCK OUT | O | Data output of serial data output |
| 9 | VDD | — | Power supply | | | | |

## ■ PST600E (IC403) : Reset IC


1 IN
Col
OP1
3 OUT
2 GND

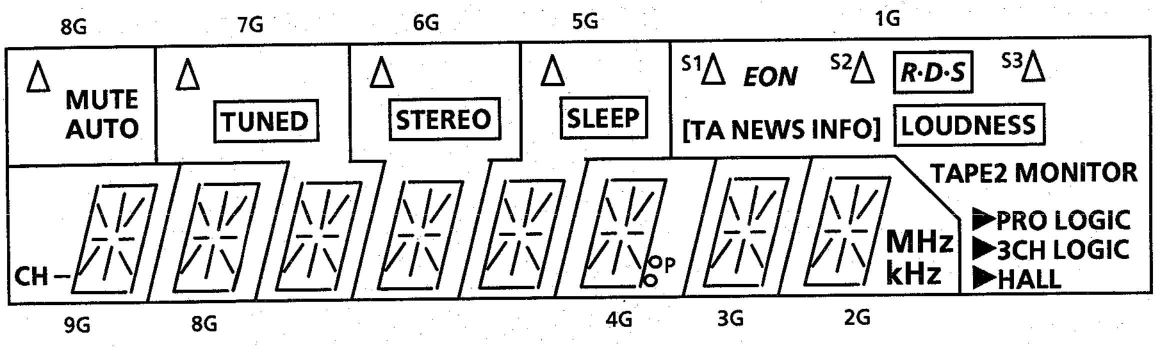
## ■ NJH32H380A (IC402) : Remocon Module IC

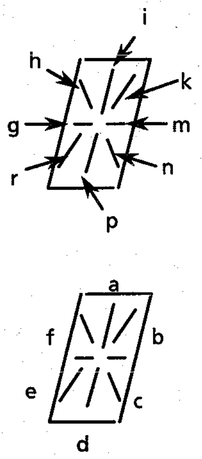

AMP
Limiter
B. P. F.
De-Modulator
Integrator
Comparator
GND
Vcc
Vout

# Internal Connection of the Display

## ■ ELU0001-183: FL TUBE

### (1) Grid Layout


8G
7G
6G
5G
1G
△ MUTE AUTO
△ TUNED
△ STEREO
△ SLEEP
S1△ EON
S2△ R·D·S
S3△
[TA NEWS INFO]
LOUDNESS
TAPE2 MONITOR
▶PRO LOGIC
▶3CH LOGIC
▶HALL
MHz
kHz
CH–
OP
9G
8G
4G
3G
2G


i
h
k
g
m
r
n
p
a
f
b
e
c
d

[ 9G ~ 2G ]

### (2) Pin Connections

| TERMINAL NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ELECTRODE | F1 | F1 | NP | NP | 1G | 2G | 3G | 4G | 5G | 6G | 7G | 8G | 9G | NC | NC | NC | NC | NC | NC | P 1 |
| TERMINAL NO. | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | |
| ELECTRODE | P 2 | P 3 | P 4 | P 5 | P 6 | P 7 | P 8 | P 9 | P 10 | P 11 | P 12 | P 13 | P 14 | P 15 | P 16 | NP | NP | F2 | F2 | |

Notes F:Filament G:Grid P:Anode NP:No Pin NP:No connection

### (3) Anode Connections

| | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|---|---|---|---|---|---|---|---|---|---|
| P1 | a | a | a | a | a | a | a | a | S1 |
| P2 | b | b | b | b | b | b | b | b | S2 |
| P3 | j | j | j | j | j | j | j | j | S3 |
| P4 | k | k | k | k | k | k | k | k | -- |
| P5 | h | h | h | h | h | h | h | h | TAPE2 MONITOR |
| P6 | f | f | f | f | f | f | f | f | LOUDNESS |
| P7 | m | m | m | m | m | m | m | m | -- |
| P8 | g | g | g | g | g | g | g | g | -- |
| P9 | c | c | c | c | c | c | c | c | ▶PRO LOGIC |
| P10 | n | n | n | n | n | n | n | n | ▶3CH LOGIC |
| P11 | r | r | r | r | r | r | r | r | ▶HALL |
| P12 | p | p | p | p | p | p | p | p | R·D·S |
| P13 | e | e | e | e | e | e | e | e | TA |
| P14 | d | d | d | d | d | d | d | d | NEWS |
| P15 | CH– | MUTE AUTO | TUNED | STEREO | SLEEP | Op | -- | MHz | INFO |
| P16 | -- | △ | △ | △ | △ | -- | -- | kHZ | EON<br>[ ] |

# Disassembly Procedures

## (1) Removing the Top Cover

1. Remove the 4 screws fastening both sides of the Top Cover, and the 2 screws fastening the rear sides.
2. Remove the Top Cover.

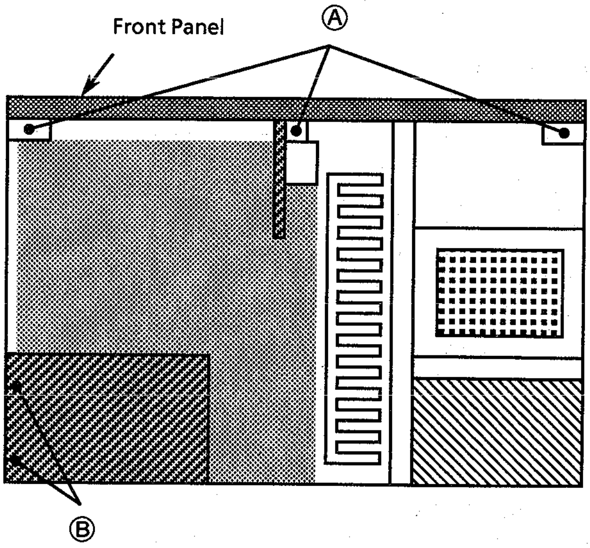


Fig 1. Top View

## (2) Removing the Front Panel

1. Remove the 3 screws Ⓐ fastening top of the Front Panel, and the 3 screws Ⓕ fastening bottom of the Front Panel.
2. Disconnect the connectors. (P101,P702,PA807,P805)
3. Remove the master volume knob.
4. Remove the nut fastenning the master volume.
5. Remove the Front Panel.

## (3) Removing the Bottom Cover

1. Remove the 17 screws Ⓔ.
2. Remove the Bottom Cover.

## (4) Removing the Tuner P.C. Board

1. Disconnect the connectors.(P101,P103)
2. Remove the 6 screws Ⓑ, Ⓒ and Ⓓ, and take it out.

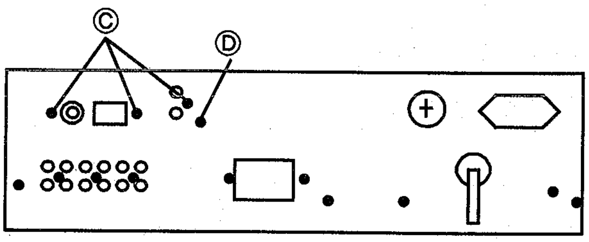


Fig 2. Rear View

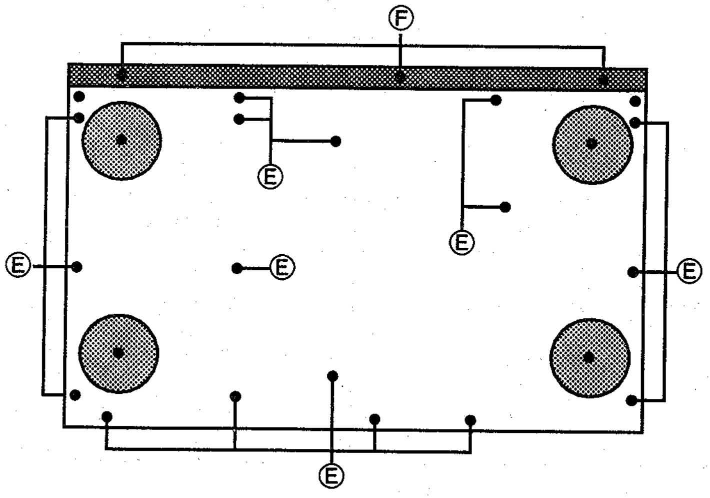


Fig 3. Bottom Cover

# Adjustment Procedures ■ Tuner section

Tuning range

| Area | Range | | |
|---|---|---|---|
| | LW (kHz) | MW (kHz) | FM (MHz) |
| East Europe | 144~288 | 522~1629 | 87.5~108 |
| Continental Europe, the U.K | | | |
| the U.S.A., Canada | | | |
| Australia | | | |
| Universal type( AM Channel space 9kHz) | | | |
| Universal type( AM Channel space 10kHz) | | | |

(1) Tuning voltage
Confirm the voltages in the table below at TP101.

FM Tuning voltage (Unit : V)

| Area | Frequency | | | |
|---|---|---|---|---|
| | 64.0MHz | 74.0MHz | 87.5MHz | 108MHz |
| East Europe | — | — | — | — |
| the U.K., Continental Europe, | — | — | 1.6±1.0 (V) | 8.0±1.0 (V) |

AM Tuning voltage (Unit : V)

| Area | Frequency (MW) | | | | | | | Frequency (LW) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 522KHz | 530KHz | 531KHz | 1600KHz | 1602KHz | 1629KHz | 1710KHz | 144kHz | 290kHz | 353kHz |
| East Europe | — | — | — | — | — | — | — | — | — | — |
| the U.K., Continental Europe | 0.9±0.2 | — | — | — | — | 7.5±0.8 | — | 0.8±0.2 | — | 7.7±0.6 |
| U.S.A., Canada | — | 0.9±0.2 | — | — | — | — | 8.0±0.8 | — | — | — |
| Australia | 0.9±0.2 | — | — | — | — | 7.5±0.8 | — | — | — | — |
| Universal (Chanel space9kHz) | — | — | 0.9±0.2 | — | 7.2±0.7 | — | — | — | — | — |
| Universal (Chanel space10kHz) | — | 0.9±0.2 | — | 7.2±0.7 | — | — | — | — | — | — |

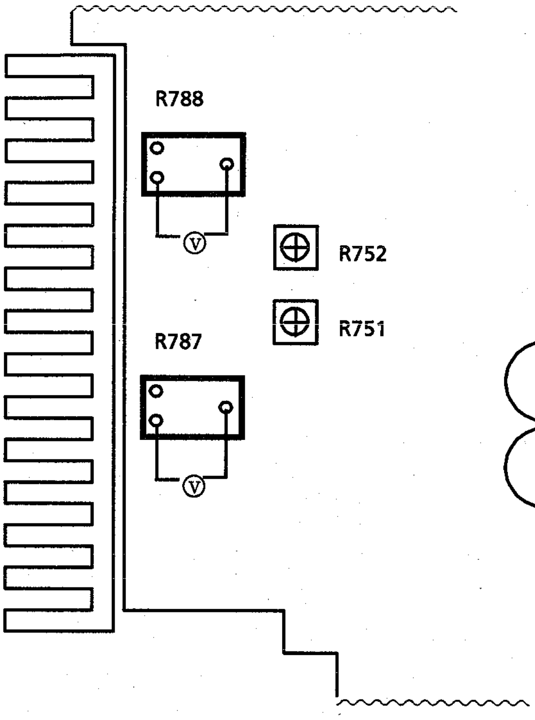
(2) FM center meter
Adjust T105 as follows after the frequency counter correctly receives a broadcast.
Adjust T105 (detector coil) so that the voltage at TP102 becomes 0±1.5mV.
(T106 is used to minimize the distortion of output on the production line.)

(3) FM separation
Receive a stereo signal.
Adjust VR 167 so that channel separation becomes maximam.

(4) LW Tracking
Adjust T102 (antenna coil) to obtain the best receiving sensitivity on 164kHz.
Adjust TC106 (antenna trimmer) to obtain the best receiving sensitivity on 288kHz.

(5) MW Tracking
Adjust T101 (antenna coil) to obtain the best receiving sensitivity on 600kHz or 603kHz.
Adjust TC106 (antenna trimmer) to obtain the best receiving sensitivity on 1400kHz or 1404kHz.

## ■ Power Amplifier section



### Idling Current

(1) Set the volume control to minimum during this adjustment.

(2) Turn R751 and R752 fully counterclockwise before the power is switch on.

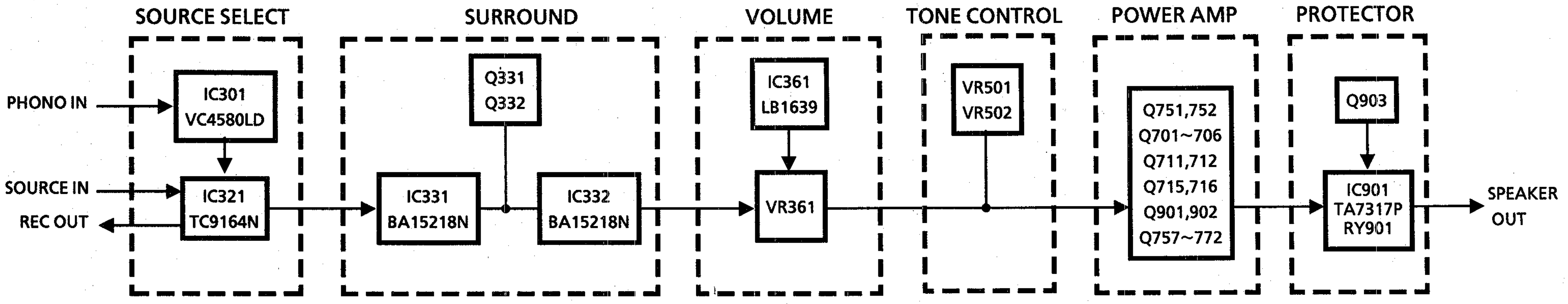
(3) Always start from cold, and allow 5 minutes to warm up before adjustment.
If the heatsink is already warm from previous use the correct adjustment can not be made.

(4) Connect a DC voltmeter to R787 resistor's leads for left channel, or to R788 for right channel.

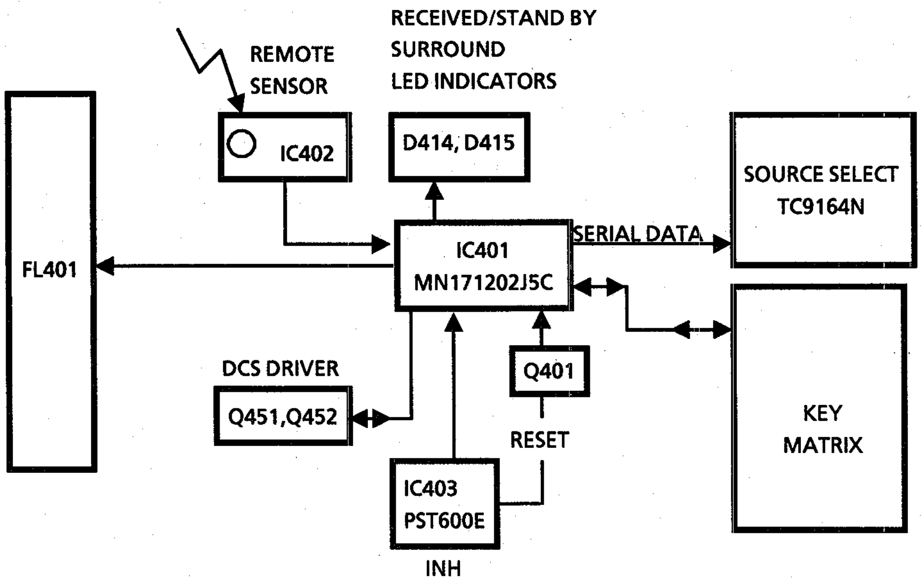
(5) Adjust R751 for left channel, or R752 for right channel, so that the DC voltmeter becomes 2mV ~ 3mV.

# Block Diagram

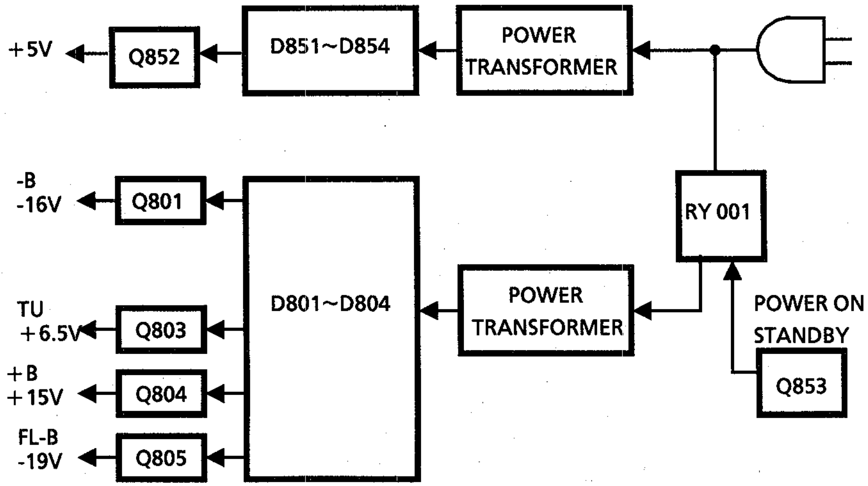
## Audio Section


SOURCE SELECT
SURROUND
VOLUME
TONE CONTROL
POWER AMP
PROTECTOR
PHONO IN
SOURCE IN
REC OUT
IC301
VC4580LD
IC321
TC9164N
Q331
Q332
IC331
BA15218N
IC332
BA15218N
IC361
LB1639
VR361
VR501
VR502
Q751,752
Q701~706
Q711,712
Q715,716
Q901,902
Q757~772
Q903
IC901
TA7317P
RY901
SPEAKER
OUT

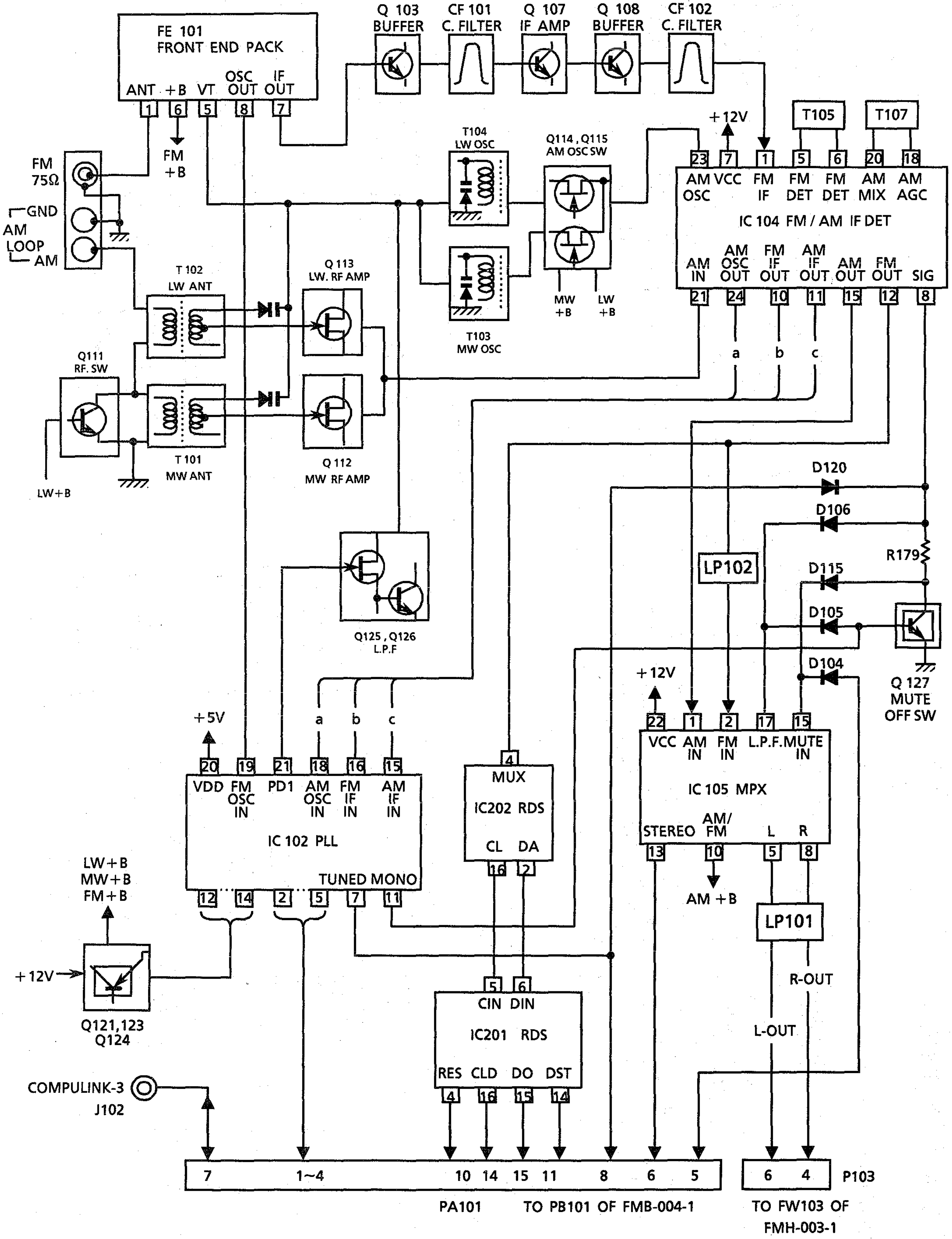
## Control Section


REMOTE
SENSOR
RECEIVED/STAND BY
SURROUND
LED INDICATORS
FL401
IC402
D414, D415
IC401
MN171202J5C
SERIAL DATA
SOURCE SELECT
TC9164N
KEY
MATRIX
DCS DRIVER
Q451,Q452
Q401
RESET
IC403
PST600E
INH

## Power Supply Section


+5V
Q852
D851~D854
POWER
TRANSFORMER
-B
-16V
Q801
TU
+6.5V
Q803
+B
+15V
Q804
FL-B
-19V
Q805
D801~D804
POWER
TRANSFORMER
RY 001
POWER ON
STANDBY
Q853

## ■ Tuner Section


FE 101
FRONT END PACK
ANT
+B
VT
OSC OUT
IF OUT
1
6
5
8
7
FM +B
FM 75Ω
GND
AM LOOP
AM
Q 103 BUFFER
CF 101 C. FILTER
Q 107 IF AMP
Q 108 BUFFER
CF 102 C. FILTER
+12V
T105
T107
23
7
1
5
6
20
18
AM OSC
VCC
FM IF
FM DET
FM DET
AM MIX
AM AGC
IC 104 FM / AM IF DET
AM IN
AM OSC OUT
FM IF OUT
AM IF OUT
AM OUT
FM OUT
SIG
21
24
10
11
15
12
8
a
b
c
T104 LW OSC
T103 MW OSC
Q114, Q115 AM OSC SW
MW +B
LW +B
T 102 LW ANT
T 101 MW ANT
Q 113 LW. RF AMP
Q 112 MW RF AMP
Q111 RF. SW
LW+B
Q125, Q126 L.P.F
D120
D106
R179
D115
D105
D104
Q 127 MUTE OFF SW
LP102
+12V
22
1
2
17
15
VCC
AM IN
FM IN
L.P.F.
MUTE IN
IC 105 MPX
STEREO
AM/ FM
L
R
13
10
5
8
AM +B
LP101
R-OUT
L-OUT
+5V
20
19
21
18
16
15
VDD
FM OSC IN
PD1
AM OSC IN
FM IF IN
AM IF IN
a
b
c
IC 102 PLL
TUNED
MONO
12
14
2
5
7
11
4
MUX
IC202 RDS
CL
DA
16
2
5
6
CIN
DIN
IC201 RDS
RES
CLD
DO
DST
4
16
15
14
LW+B
MW+B
FM+B
+12V
Q121,123
Q124
COMPULINK-3
J102
7
1~4
10
14
15
11
8
6
5
PA101
TO PB101 OF FMB-004-1
6
4
P103
TO FW103 OF
FMH-003-1

# –MEMO–

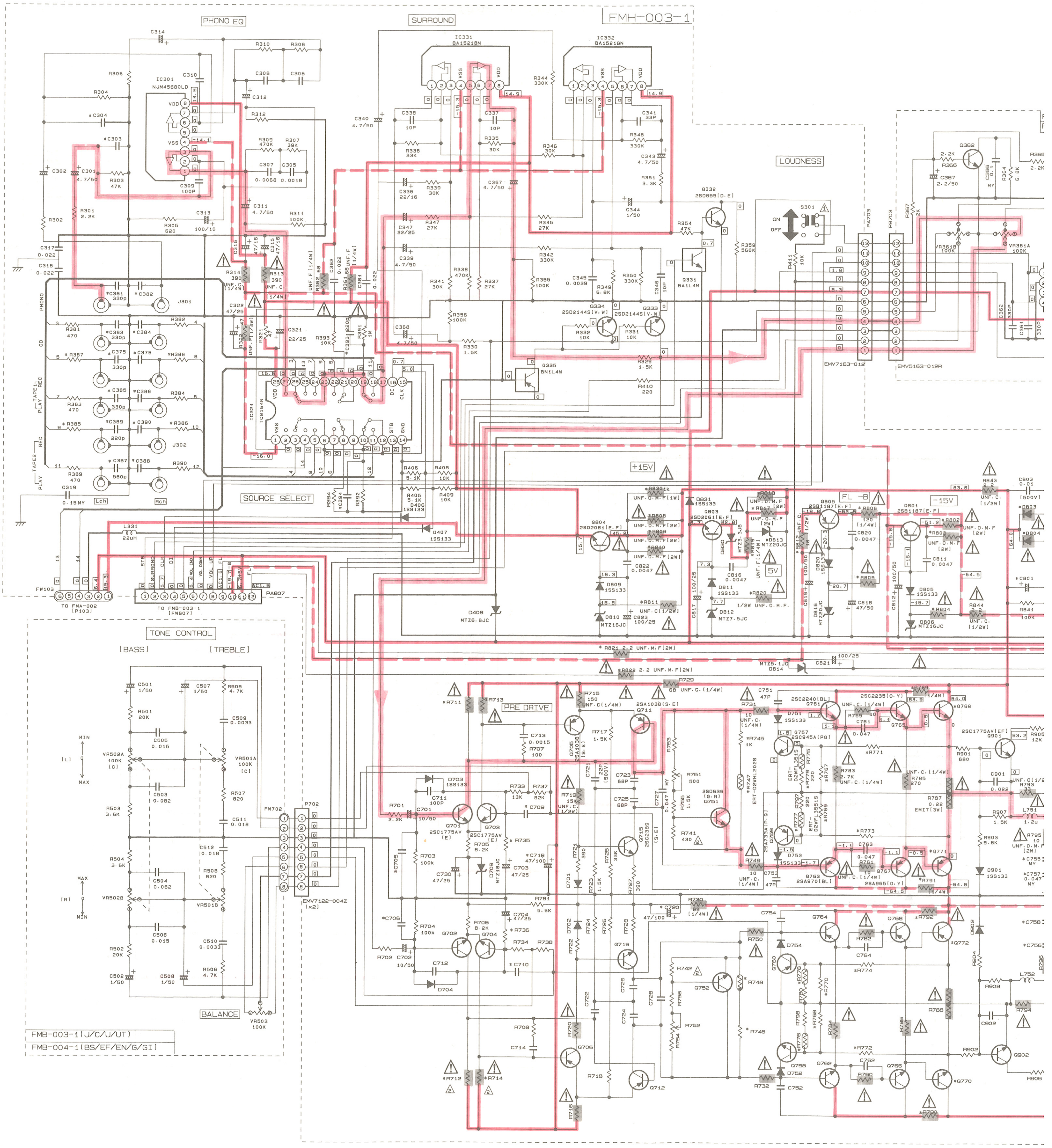
# –MEMO–

# Schematic Diagrams

(1) Audio Section

### How to Use Schematic Diagrams

1. ━━━ indicates the +B line
2. - - - - indicates the –B line.
3. ▬▬ indicates signal path.
4. Parts marked with ⚠ and those in shaded area ( ▨ ) are parts for safety. Be sure to use one with the specified part number.
5. This is the standard circuit diagram. The circuits and circuit care subject to change for improvement without notice.


FMH-003-1
PHONO EQ
IC301 NJM4580LD
SURROUND
IC331 BA15218N
IC332 BA15218N
LOUDNESS
S301
ON
OFF
Q332 2SD655[D.E]
Q331 BA1L4M
Q334 2SD2144S[V.W]
Q333 2SD2144S[V.W]
Q335 BN1L4M
PA703
PB703
EMV7163-012
EMV5163-012R
VR361B 100K
VR361A 100K
Q362
PHONO
CD
TAPE1 PLAY REC
TAPE2 PLAY REC
J301
J302
Lch
Rch
IC321 TC9164N
SOURCE SELECT
+15V
-15V
FL -B
5V
Q804 2SD2061[E.F]
Q803 2SD2061[E.F]
Q805 2SB1187[E.F]
Q801 2SB1187[E.F]
L331 22uH
D407 1SS133
D408 MTZ6.8JC
FW103
TO FMA-002 [P103]
TO FMB-003-1 [FW807]
PA807
TONE CONTROL
[BASS]
[TREBLE]
VR502A 100K [C]
VR501A 100K [C]
VR502B
VR501B
MIN
MAX
[L]
[R]
BALANCE
VR503 100K
FMB-003-1 [J/C/U/UT]
FMB-004-1 [BS/EF/EN/G/GI]
FW702
P702
EMV7122-004Z [x2]
PRE DRIVE
Q701 2SC1775AV [E]
Q703 2SC1775AV [E]
Q702
Q704
Q705 2SA1038 [S.E]
Q711 2SA1038 [S.E]
Q715 2SC2389 [S.E]
Q751 2SD636 [Q.R]
Q761 2SC2240[BL]
Q765 2SC2235[O.Y]
Q757 2SC945A[PQ]
Q763 2SA970[BL]
Q767 2SA965[O.Y]
Q901 2SC1775AV[EF]
Q902
Q706
Q712
Q716
Q752
Q758
Q760
Q762
Q764
Q766
Q768
Q769
Q770
Q771
Q772
R821 2.2 UNF.M.F[2W]
R822 2.2 UNF.M.F[2W]
D814 MTZ5.1JC
C821 100/25

## se Schematic Diagrams

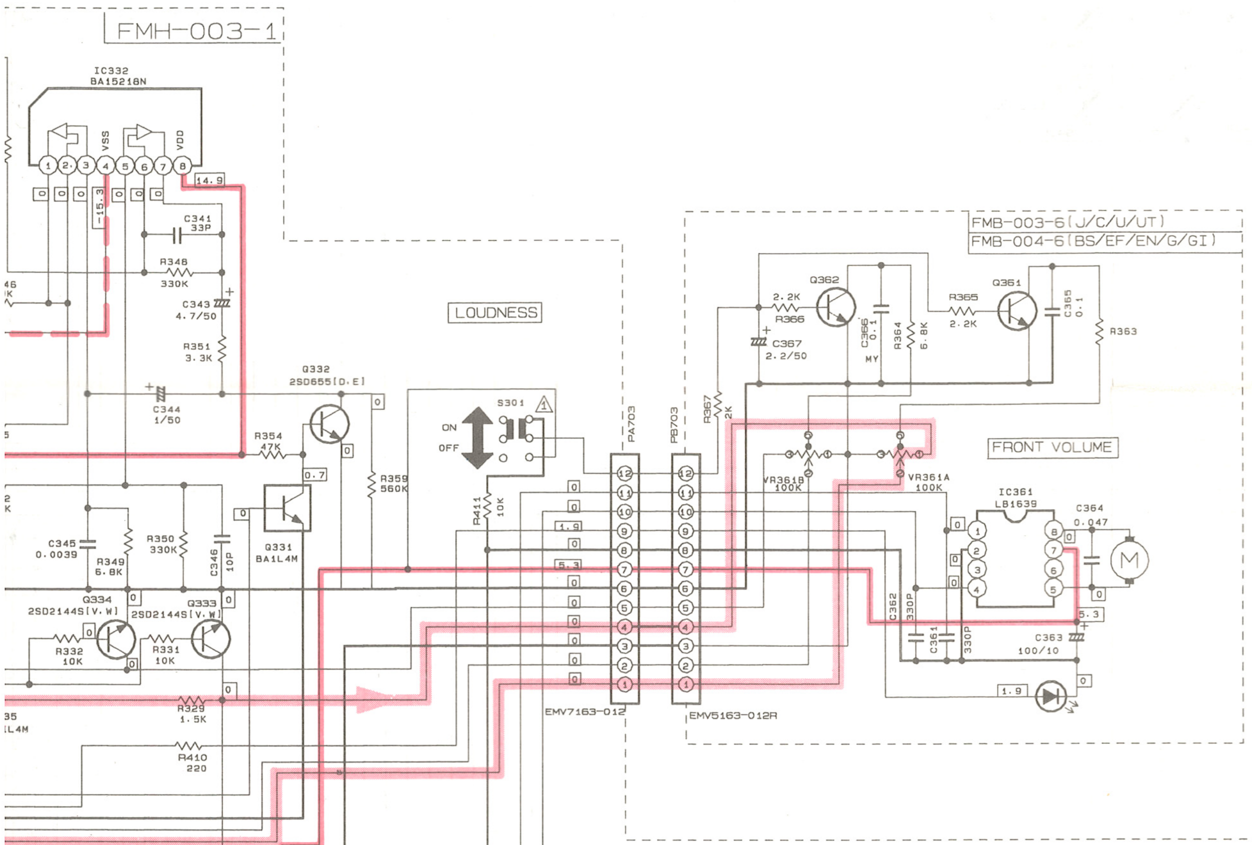
dicates the +B line

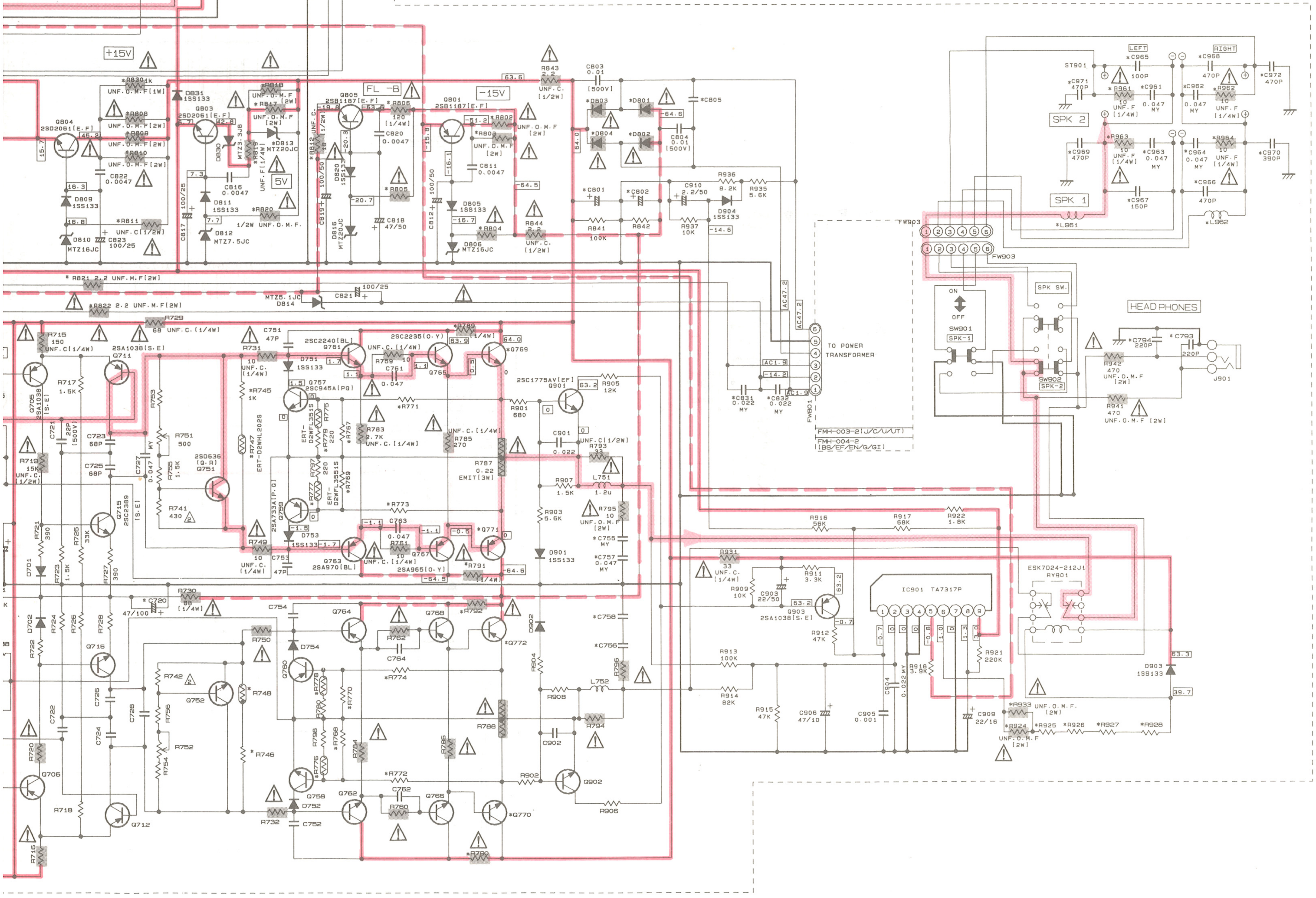
dicates the –B line.

dicates signal path.

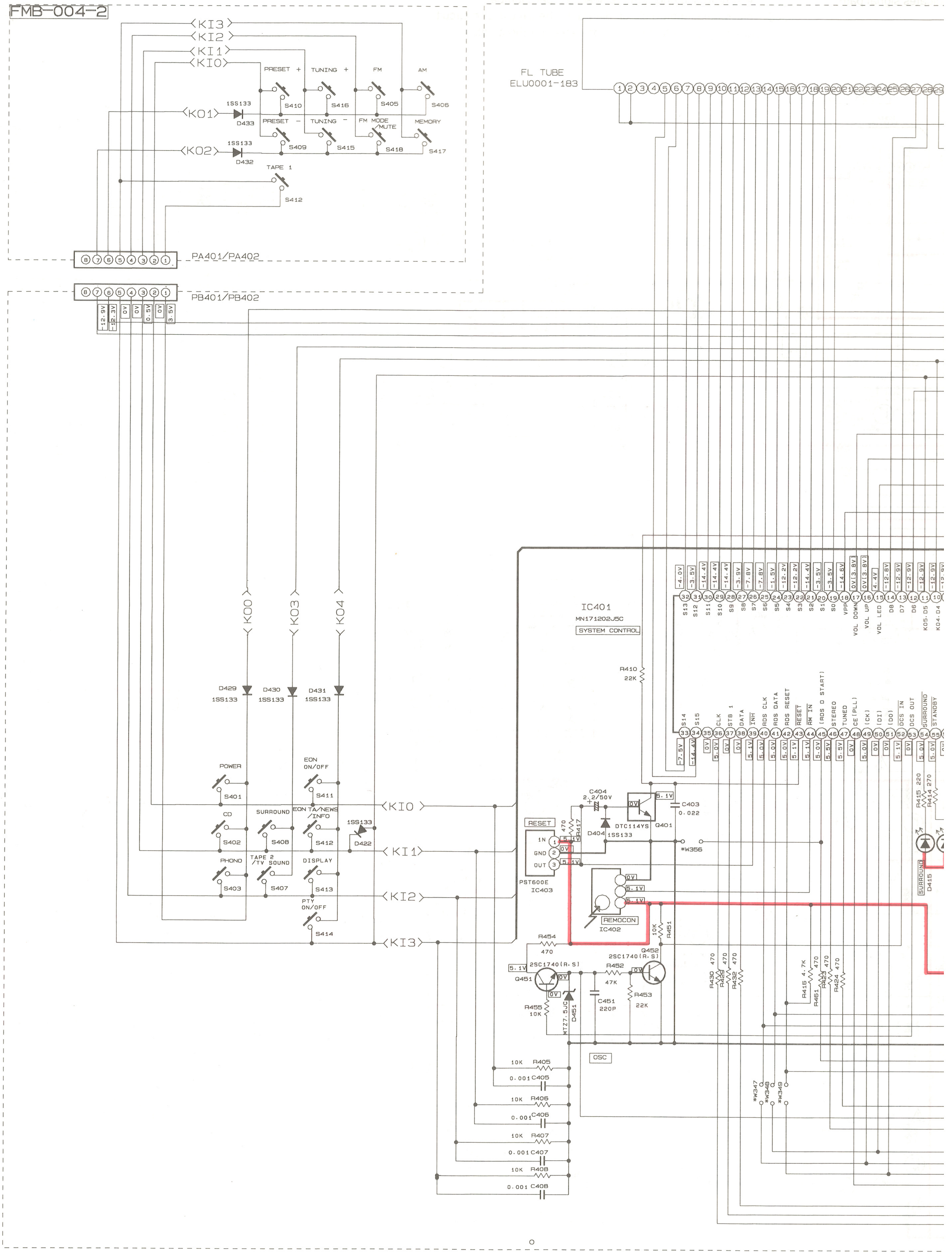
4. Partsmarked with ⚠ and those in shaded area ( ▨ ) are parts for safety. Be sure to use one with the specified part number.
5. This is the standard circuit diagram. The circuits and circuit care subject to change for improvement without notice.

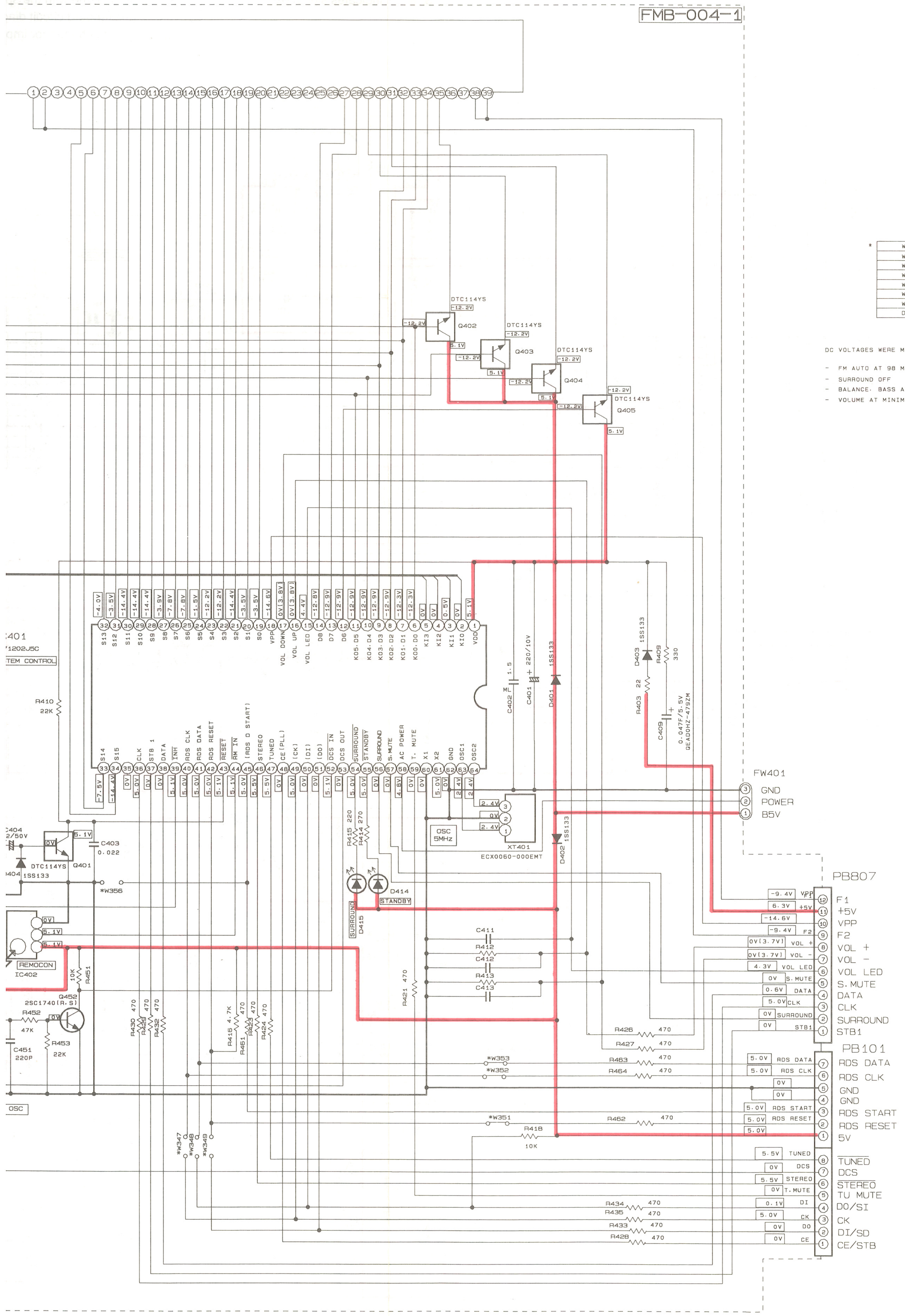
| *MARK | J | C | U. UT | EF. EN | BS | G. GI |
|---|---|---|---|---|---|---|
| R385-R388 | 470 Ω | 470 Ω | 470 Ω | 2.2K Ω | 2.2K Ω | 2.2K Ω |
| R789-R792 | 12 Ω UNF.C | 10 Ω UNF.F | 10 UNF.F | 10 Ω UNF.F | 10 Ω UNF.F | 10 Ω UNF.F |
| R767-R770 | 56 Ω | 56 Ω | 82 Ω | 82 Ω | 82 Ω | 82 Ω |
| R771-R774 | 36 Ω | 36 Ω | 150 Ω | 150 Ω | 150 Ω | 150 Ω |
| R775-R778 | USED | USED | NONE | NONE | NONE | NONE |
| R924 | 1.8K Ω | 1.8K Ω | 820 Ω | 820 Ω | 820 Ω | 820 Ω |
| R925 | 120 Ω | 120 Ω | 75 Ω | SHORT(W774) | SHORT | SHORT |
| R926 | 150 Ω | 150 Ω | SHORT(W775) | SHORT | SHORT | SHORT |
| R802 | 820 Ω | 820 Ω | 820 Ω | 120 Ω | 120 Ω | 120 Ω |
| R803 | 1K Ω | 1K Ω | 1K Ω | NONE | NONE | NONE |
| R804 | 5.6K Ω<br>UNF O.M.F 1W | 5.6K Ω<br>UNF O.M.F 1W | 5.6K Ω<br>UNF C. 1/2W | 4.7K Ω<br>UNF C. 1/2W | 4.7K Ω<br>UNF C. 1/2W | 4.7K Ω<br>UNF C. 1/2W |
| R805 | 4.7K Ω<br>UNF O.M.F 1W | 4.7K Ω<br>UNF O.M.F 1W | 4.7K Ω<br>UNF C. 1/2W | 3.9K Ω<br>UNF C. 1/2W | 3.9K Ω<br>UNF C. 1/2W | 3.9K Ω<br>UNF C. 1/2W |
| R806 | UNF.C | UNF.F | UNF.F | UNF.F | UNF.F | UNF.F |
| R812 | USED | USED | USED | SHORT(W750) | SHORT | SHORT |
| R830 | USED | USED | NONE | NONE | NONE | NONE |
| R808 | 560 Ω | 560 Ω | 180 Ω | 180 Ω | 180 Ω | 180 Ω |
| R809 | 560 Ω | 560 Ω | 560 Ω | 180 Ω | 180 Ω | 180 Ω |
| R810 | 560 Ω | 560 Ω | 560 Ω | NONE | NONE | NONE |
| R811 | 8.2K Ω | 8.2K Ω | 8.2K Ω | 4.7K Ω | 4.7K Ω | 4.7K Ω |
| R817 | 100 Ω | 100 Ω | 120 Ω | 120 Ω | 120 Ω | 120 Ω |
| R819 | SHORT (W780) | SHORT | 4.7 Ω | 4.7 Ω | 4.7 Ω | 4.7 Ω |
| R820 | 8.2K Ω | 8.2K Ω | 8.2K Ω | 6.8K Ω | 6.8K Ω | 6.8K Ω |
| R961-R964 | NONE | NONE | NONE | USED | USED | USED |
| R818 | NONE | NONE | 150 Ω | 150 Ω | 150 Ω | 150 Ω |
| R821.R822 | 2.2 Ω | 2.2 Ω | 2.2 Ω | 3.9 Ω | 3.9 Ω | 3.9 Ω |
| R745.R746 | NONE | NONE | USED | USED | USED | USED |
| R747.R748 | NONE | NONE | USED<br>ERT-D2WHL202S | USED | USED | USED |
| R933 | NONE | NONE | NONE | NONE | NONE | NONE |
| R927.R928 | SHORT<br>W748.W749 | SHORT | SHORT | SHORT | SHORT | SHORT |
| R779.R780 | SHORT(W778.W776) | SHORT | NONE | NONE | NONE | NONE |
| R797.R798 | SHORT(W777.W779) | SHORT | NONE | NONE | NONE | NONE |
| R735.R736 | 560 Ω | 560 Ω | 680 Ω | 820 Ω | 820 Ω | 820 Ω |
| R711-R714 | 2K Ω | 2K Ω | 1.5K Ω | 1.5K Ω | 1.5K Ω | 1.5K Ω |
| C303.C304 | 100P | 100P | 100P | 470P | 470P | 470P |
| C393.C394 | NONE | NONE | NONE | 220P | 220P | 220P |
| C375-C390 | NONE | NONE | NONE | USED | USED | USED |
| C705.C706 | 100P | 100P | 100P | 270P | 270P | 270P |
| C719.C720 | NONE | 47/100 | 47/63 | 47/63 | 47/63 | 47/63 |
| C755.C756 | 0.022 | 0.047 | 0.047 | 0.047 | 0.047 | 0.047 |
| C757.C758 | SHORT<br>W712.W713 | USED | USED | USED | USED | USED |
| C805 | 0.01/500V | 0.01/500V | 0.22/160V | 0.22/160V | 0.22/160V | 0.22/160V |
| C831.C832 | USED | NONE | NONE | USED | USED | USED |
| C961-C964 | NONE | NONE | NONE | USED | USED | USED |
| C965-C968 | NONE | NONE | NONE | USED | USED | USED |
| C969-C972 | NONE | NONE | USED | USED | USED | USED |
| C793.C794 | NONE | NONE | USED | USED | USED | USED |
| C801.C802 | 6800/75 | 6800/75 | 6800/75 | 6800/56 | 6800/56 | 6800/56 |
| C709.C710 | 10P | 10P | 10P | 22P | 22P | 22P |
| | | | | | | |
| Q769.Q770 | 2SD2155LB(R.0) | 2SD2155LB(R.0) | 2SC3854LD(0.Y) | 2SD2155LB(R.0) | 2SD2155LB(R.0) | 2SD2155LB(R.0) |
| Q771.Q772 | 2SB1429LB(R.0) | 2SB1429LB(R.0) | 2SA1490LD(0.Y) | 2SB1429LB(R.0) | 2SB1429LB(R.0) | 2SB1429LB(R.0) |
| | | | | | | |
| D801-D804 | 30D2FC | 30D2FC | 30DF2SFC | 30DF2SFC | 30DF2SFC | 30DF2SFC |
| D813 | NONE | NONE | USED | USED | USED | USED |
| | | | | | | |
| L961.L962 | SHORT<br>W709.W710 | SHORT | SHORT | USED | USED | USED |


FMH-003-1
IC332
BA15218N
VSS
VDD
14.9
15.3
C341
33P
R348
330K
C343
4.7/50
R351
3.3K
C344
1/50
LOUDNESS
Q332
2SD655(D.E)
S301
ON
OFF
R354
47K
R359
560K
0.7
Q331
BA1L4M
C345
0.0039
R350
330K
R349
6.8K
C346
10P
Q334
2SD2144S(V.W)
Q333
2SD2144S(V.W)
R332
10K
R331
10K
R329
1.5K
R410
220
R411
10K
PA703
PB703
EMV7163-012
EMV5163-012R
R367
2K
FMB-003-6(J/C/U/UT)
FMB-004-6(BS/EF/EN/G/GI)
Q362
Q361
R366
2.2K
C367
2.2/50
C366
0.1
MY
R364
6.8K
R365
2.2K
C365
0.1
R363
FRONT VOLUME
VR361B
100K
VR361A
100K
IC361
LB1639
C364
0.047
M
C362
330P
C361
330P
C363
100/10
1.9
5.3


+15V
FL -B
-15V
5V
Q804
2SD2081(E.F)
Q803
2SD2081(E.F)
Q805
2SB1187(E.F)
Q801
2SB1187(E.F)
D831
1SS133
D809
1SS133
D810
MTZ16JC
D811
1SS133
D812
MTZ7.5JC
D813
MTZ20JC
D816
MTZ20JC
D805
1SS133
D806
MTZ16JC
D801
D802
D803
D804
C803
0.01
(500V)
C804
0.01
(500V)
C805
R843
2.2
UNF.C.
(1/2W)
R844
2.2
UNF.C.
(1/2W)
63.6
64.6
64.5
C910
2.2/50
R936
8.2K
R935
5.6K
R937
10K
D904
1SS133
-14.6
R841
100K
R842
C801
C802
C820
0.0047
C818
47/50
C811
0.0047
C815
0.0047
C822
0.0047
C823
100/25
R821 2.2 UNF.M.F(2W)
R822 2.2 UNF.M.F(2W)
D814
MTZ5.1JC
C821
100/25
TO POWER
TRANSFORMER
AC1
AC47.2
C831
0.022
MY
C832
0.022
MY
FW801
FMH-003-2(J/C/U/UT)
FMH-004-2(BS/EF/EN/G/GI)
FW903
ST901
LEFT
RIGHT
C965
C968
C971
470P
C972
470P
R961
R962
C961
0.047
MY
C962
0.047
MY
C963
0.047
MY
C964
0.047
MY
C969
470P
C970
390P
R963
R964
C966
470P
C967
150P
L961
L962
SPK 2
SPK 1
SPK SW.
ON
OFF
SW901
SPK-1
SW902
SPK-2
HEAD PHONES
C794
220P
C793
220P
R942
470
UNF.O.M.F
(2W)
R941
470
UNF.O.M.F (2W)
J901
IC901 TA7317P
ESK7024-212J1
RY901
Q903
2SA1038(S.E)
R911
3.3K
R912
47K
R909
10K
C903
22/50
R913
100K
R914
82K
R915
47K
C906
47/10
C905
0.001
C904
0.022
MY
R918
3.3K
R921
220K
D903
1SS133
63.3
39.7
C909
22/16
R933 UNF.O.M.F.
(2W)
R924
R925
R926
R927
R928
R916
56K
R917
68K
R922
1.8K
R931
33
UNF.C.
(1/4W)
Q901
2SC1775AV(EF)
Q902
R905
12K
R901
680
C901
0.022
R793
33
L751
1.2u
R907
1.5K
R903
5.6K
R795
10
UNF.O.M.F
(2W)
C755
MY
C757
0.047
MY
D901
1SS133
C758
C756
L752
R908
R902
R906
C902
R904
Q711
2SA1038(S.E)
Q705
2SA1038(S.E)
Q715
2SC2389(S.E)
Q751
2SD636(Q.R)
Q761
2SC2240(BL)
Q765
2SC2235(O.Y)
Q757
2SC945A(PQ)
Q755
2SA733A(P.Q)
Q763
2SA970(BL)
Q767
2SA965(O.Y)
Q769
Q771
Q764
Q768
Q772
Q760
Q758
Q762
Q766
Q770
Q716
Q706
Q712
Q752
D751
1SS133
D753
1SS133
D752
D754
D701
D702
D902
R715
150
UNF.C(1/4W)
R717
1.5K
R719
15K
UNF.C.
(1/2W)
C751
47P
R731
10
UNF.C.
(1/4W)
R745
1K
R747
ERT-D2WHL202S
R751
500
R755
1.5K
R741
430
C723
68P
C725
68P
C727
0.047
MY
R740
10
UNF.C.
(1/4W)
C753
47P
C761
0.047
C763
C762
C764
C752
R783
2.7K
UNF.C.(1/4W)
R785
270
UNF.C.(1/4W)
R787
0.22
EMIT(3W)
R729
68 UNF.C.(1/4W)
R730
68
(1/4W)
C720
47/100
C754
R750
R742
R748
R746
R752
R756
R732
R718
R720
R716
R791
R792
R790
R788
R794
R772
R774
R773
R771
63.2
64.0
64.6
-64.5

(2) System Control Section


FMB-004-2
KI3
KI2
KI1
KI0
PRESET +
TUNING +
FM
AM
S410
S416
S405
S406
1SS133
D433
KO1
PRESET −
TUNING −
FM MODE /MUTE
MEMORY
S409
S415
S418
S417
1SS133
D432
KO2
TAPE 1
S412
PA401/PA402
PB401/PB402
-12.9V
-12.3V
0V
0V
0.5V
0V
3.5V
FL TUBE
ELU0001-183
KO0
KO3
KO4
D429
1SS133
D430
1SS133
D431
1SS133
POWER
S401
EON ON/OFF
S411
CD
S402
SURROUND
S408
EON TA/NEWS /INFO
S412
1SS133
D422
PHONO
S403
TAPE 2 /TV SOUND
S407
DISPLAY
S413
PTY ON/OFF
S414
IC401
MN171202J5C
SYSTEM CONTROL
R410
22K
C404
2.2/50V
R417
470
D404
1SS133
DTC114YS
Q401
C403
0.022
RESET
IN
GND
OUT
PST600E
IC403
*W356
REMOCON
IC402
R454
470
R451
10K
Q452
2SC1740(R.S)
R452
47K
R453
22K
C451
220P
Q451
2SC1740(R.S)
R455
10K
MTZ7.5JC
D451
OSC
10K R405
0.001 C405
10K R406
0.001 C406
10K R407
0.001 C407
10K R408
0.001 C408
R430 470
R431 470
R432 470
*W347
*W348
*W349
R416 4.7K
R461 470
R423 470
R424 470
R415 220
R414 270
SURROUND
D415
S13
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
S0
VPP
VOL DOWN
VOL UP
VOL LED
D8
D7
D6
K05.D5
K04.D4
S14
S15
CLK
STB 1
DATA
INH
RDS CLK
RDS DATA
RDS RESET
RESET
RM IN
(RDS D START)
STEREO
TUNED
CE(PLL)
(CK)
(DI)
(DO)
DCS IN
DCS OUT
SURROUND
STANDBY
-4.0V
-3.5V
-14.4V
-14.4V
-3.9V
-7.8V
-7.8V
-1.5V
-12.2V
-12.2V
-14.4V
-3.5V
-14.6V
0V(3.8V)
0V(3.8V)
4.4V
-12.8V
-12.9V
-12.9V
-12.9V
-12.9V
-7.5V
-14.4V
0V
5.0V
5.1V
5.0V
5.1V
5.0V
5.0V
5.0V
5.1V
5.1V
5.0V
5.5V
5.5V
0V
0V
0V
5.1V
5.0V
5.0V

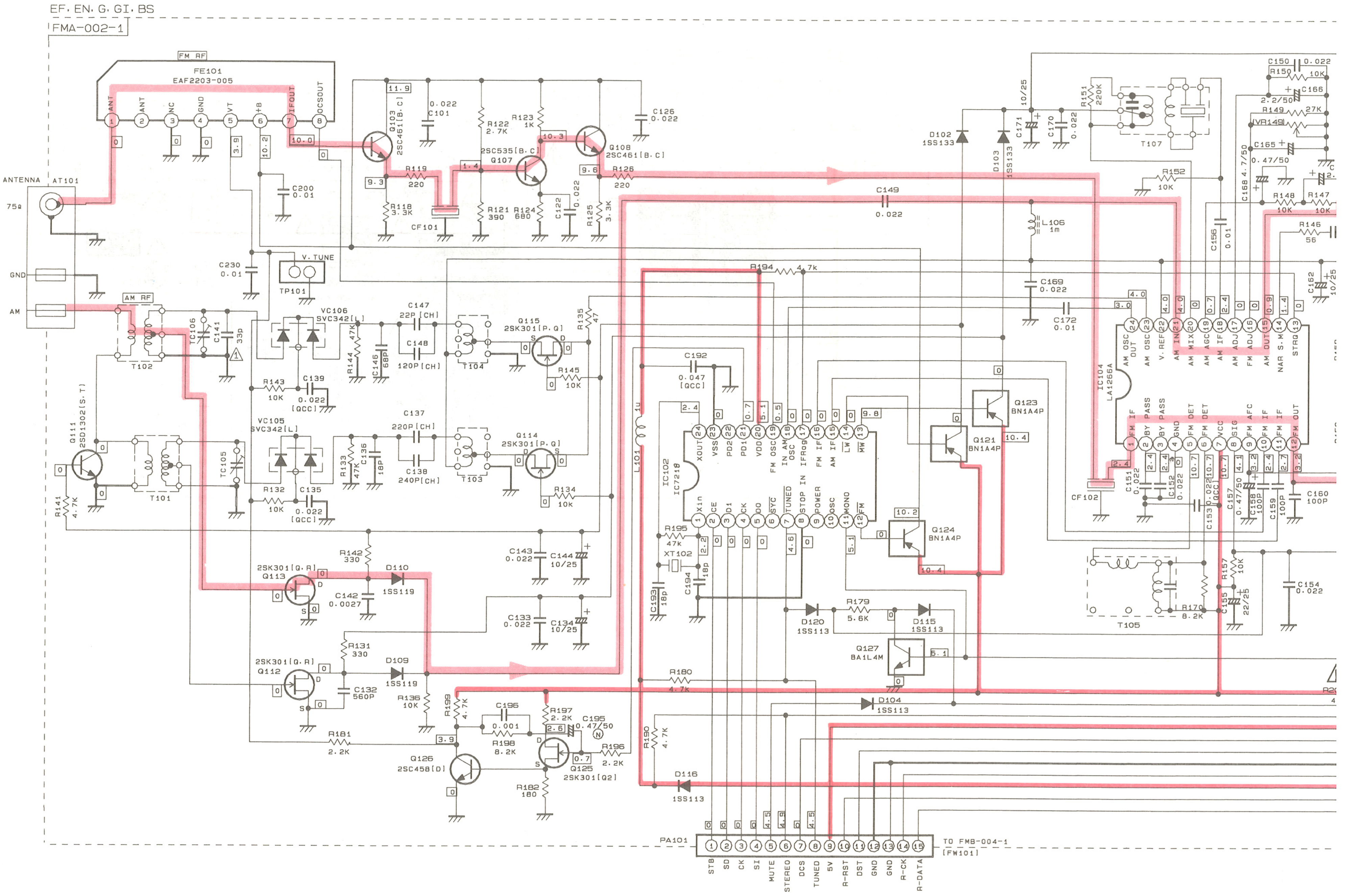

FMB-004-1
DTC114YS
Q402
Q403
Q404
Q405
Q401
IC401
SYSTEM CONTROL
R410 22K
C402 1.5 ML
C401 220/10V
D401 1SS133
D403 1SS133
R409 330
R403 22
C409 0.047F/5.5V QEAD0HZ-479ZM
D402 1SS133
FW401
GND
POWER
B5V
XT401
ECX0060-000EMT
OSC 5MHz
R415 220
R414 270
D414 STANDBY
D415 SURROUND
C403 0.022
*W356
REMOCON
IC402
Q452 2SC1740(R.S)
R451 10K
R452 47K
R453 22K
C451 220P
C411
R412
C412
R413
C413
R421 470
R426 470
R427 470
R463 470
R464 470
R462 470
R418 10K
*W353
*W352
*W351
*W347
*W348
*W349
R434 470
R435 470
R433 470
R428 470
R430 470
R431 470
R432 470
R416 4.7K
R461 470
R423 470
R424 470
PB807
F1
+5V
VPP
F2
VOL +
VOL −
VOL LED
S. MUTE
DATA
CLK
SURROUND
STB1
PB101
RDS DATA
RDS CLK
GND
GND
RDS START
RDS RESET
5V
TUNED
DCS
STEREO
TU MUTE
DO/SI
CK
DI/SD
CE/STB
OSC

| * | |
|---|---|
| W347 | OPEN |
| W348 | OPEN |
| W349 | OPEN |
| W351 | SHORT |
| W352 | SHORT |
| W353 | SHORT |
| W356 | OPEN |
| D422 | USED |

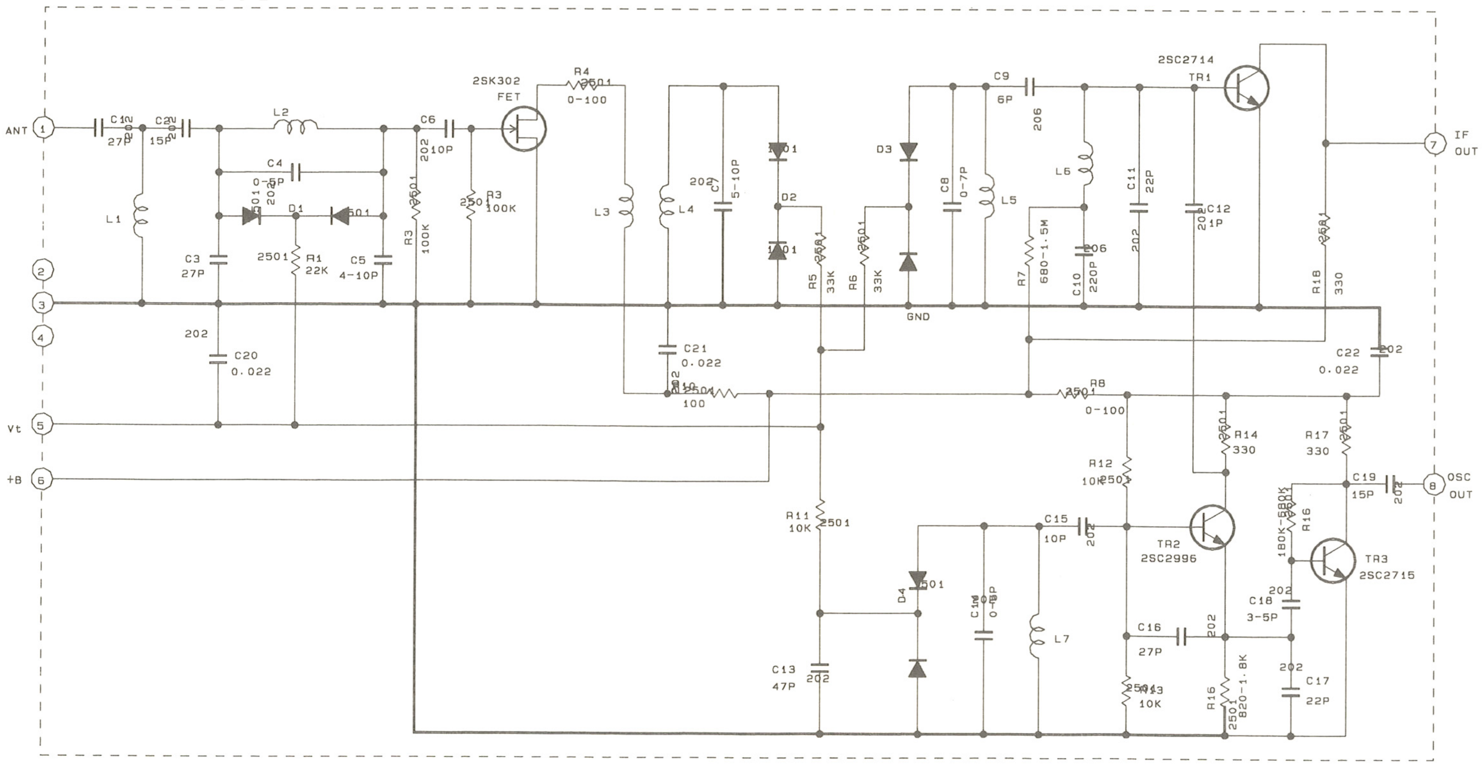
DC VOLTAGES WERE MEASURED UNDER THE FOLLOWING CONDITIONS:

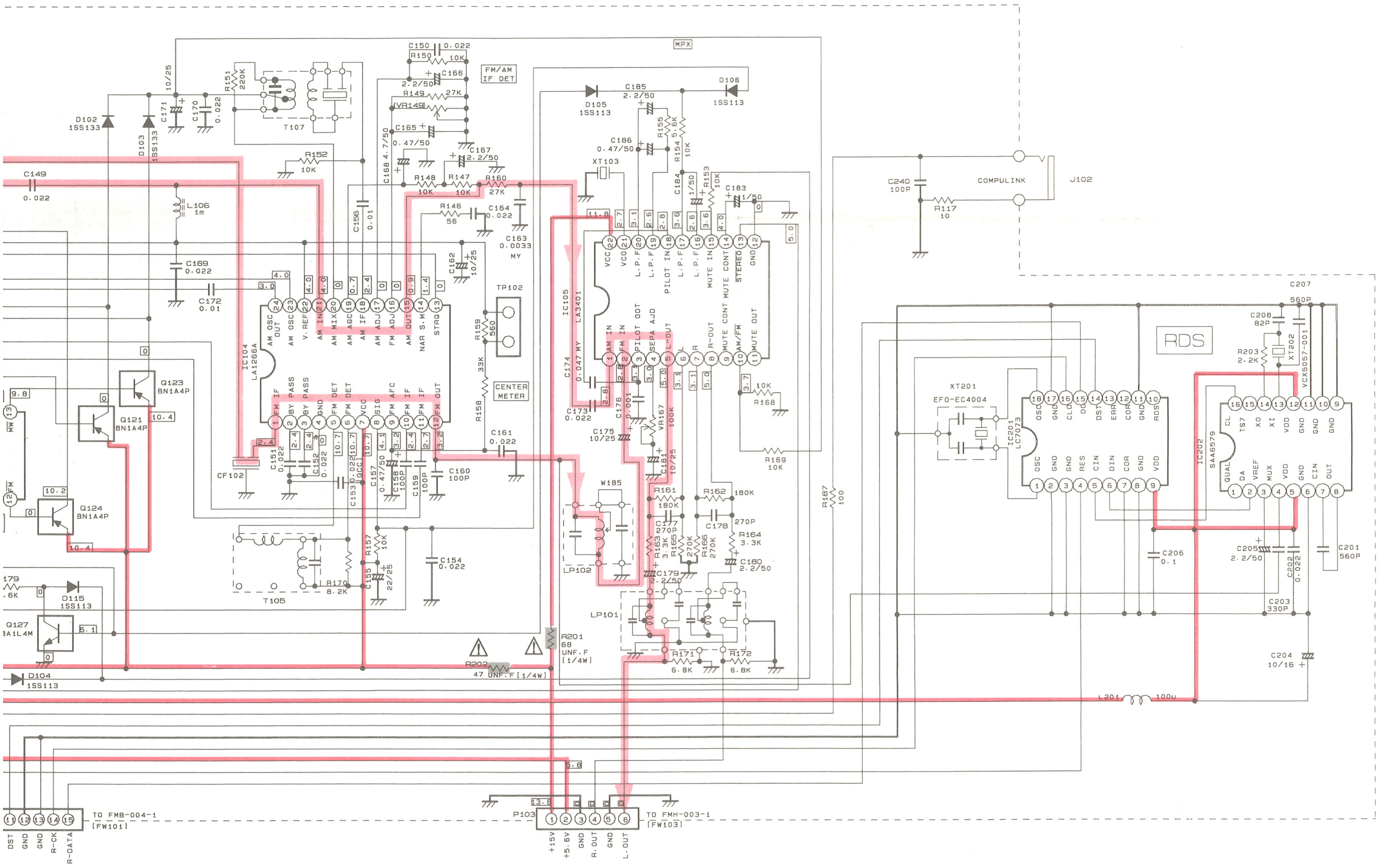
- FM AUTO AT 98 MHZ
- SURROUND OFF
- BALANCE, BASS AND TREBLE FLAT
- VOLUME AT MINIMUM

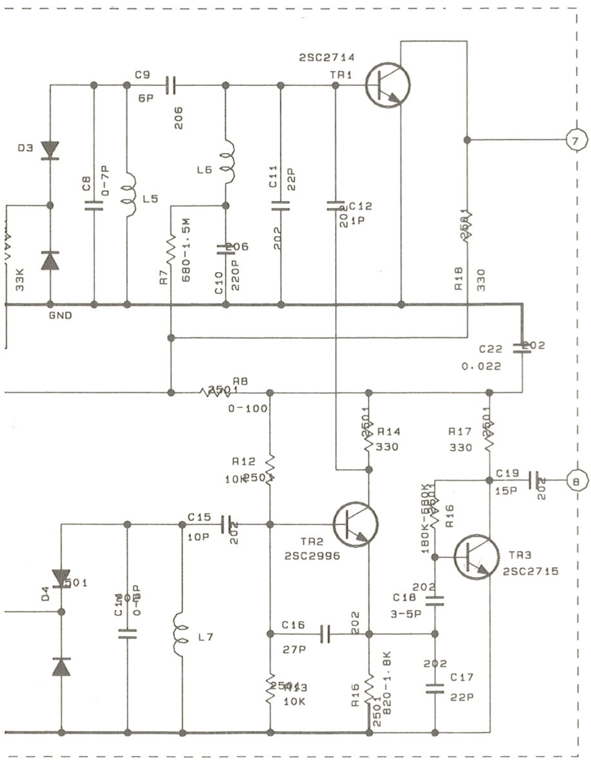
### (3) Tuner Section


EF. EN. G. GI. BS
FMA-002-1
FM RF
FE101
EAF2203-005
ANT
NC
GND
VT
+B
IFOUT
OSCOUT
ANTENNA
AT101
75Ω
GND
AM
AM RF
T102
T101
Q111
2SD1302[S.T]
R141 4.7K
TC106
C141
33P
TC105
VC106 SVC342[L]
VC105 SVC342[L]
R143 10K
C139 0.022 [QCC]
R132 10K
C135 0.022 [QCC]
R144 47K
C146 68P
C147 22P [CH]
C148 120P [CH]
R133 47K
C136 18P
C137 220P [CH]
C138 240P [CH]
T104
T103
Q115 2SK301 [P.Q]
Q114 2SK301 [P.Q]
R145 10K
R134 10K
R135 47
Q103 2SC461 [B.C]
C101 0.022
R119 220
R118 3.3K
CF101
R122 2.7K
R123 1K
Q107 2SC535 [B.C]
R121 390
R124 680
C122 0.022
Q108 2SC461 [B.C]
R125 3.3K
R126 220
C126 0.022
C200 0.01
C230 0.01
V. TUNE
TP101
C149 0.022
L106 1m
C169 0.022
C172 0.01
D102 1SS133
D103 1SS133
C171 10/25
C170 0.022
R151 220K
T107
R194 4.7K
C192 0.047 [QCC]
IC102 IC7218
L101 1u
XT102
R195 47K
C193 18P
C194 18P
Q123 BN1A4P
Q121 BN1A4P
Q124 BN1A4P
Q127 BA1L4M
D120 1SS113
R179 5.6K
D115 1SS113
D104 1SS113
D116 1SS113
R180 4.7K
R190 4.7K
Q113 2SK301 [Q.R]
R142 330
D110 1SS119
C142 0.0027
C143 0.022
C144 10/25
C133 0.022
C134 10/25
Q112 2SK301 [Q.R]
R131 330
D109 1SS119
C132 560P
R136 10K
R181 2.2K
R199 4.7K
C196 0.001
R197 2.2K
C195 0.47/50
R198 8.2K
R196 2.2K
Q126 2SC458 [D]
Q125 2SK301 [Q2]
R182 180
IC104 LA1266A
CF102
C151 0.022
C152 0.022
C153 0.022
C157 0.47/50
C158 100P
C159 100P
C160 100P
C150 0.022
R150 10K
C166 2.2/50
R149 27K
VR149
C165 0.47/50
R152 10K
C168 4.7/50
C156 0.01
R148 10K
R147 10K
R146 56
C162 10/25
T105
R157 10K
R170 8.2K
C155 22/25
C154 0.022
PA101
STB
SD
CK
SI
MUTE
STEREO
DCS
TUNED
5V
R-RST
DST
GND
GND
R-CK
R-DATA
TO FMB-004-1 [FW101]

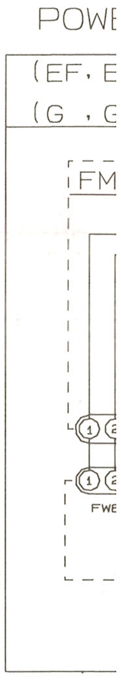
FE101
EAF2203-005


ANT
IF OUT
OSC OUT
Vt
+B
C1 27P
C2 15P
L1
L2
C3 27P
C4
D1
R1 22K
C5 4-10P
C20 0.022
2SK302 FET
C6 10P
R3 100K
R4 0-100
L3
L4
C7 5-10P
D2
R5 33K
R6 33K
D3
C8 0-7P
L5
C9 6P
L6
C11 22P
C12 1P
R7 680-1.5M
C10 220P
GND
2SC2714 TR1
R18 330
C21 0.022
R10 100
R8 0-100
C22 0.022
R14 330
R17 330
R12 10K
R11 10K
C15 10P
TR2 2SC2996
R16 180K-560K
TR3 2SC2715
C19 15P
D4
C14 0-6P
L7
C16 27P
C18 3-5P
C17 22P
C13 47P
R13 10K
R15 820-1.8K

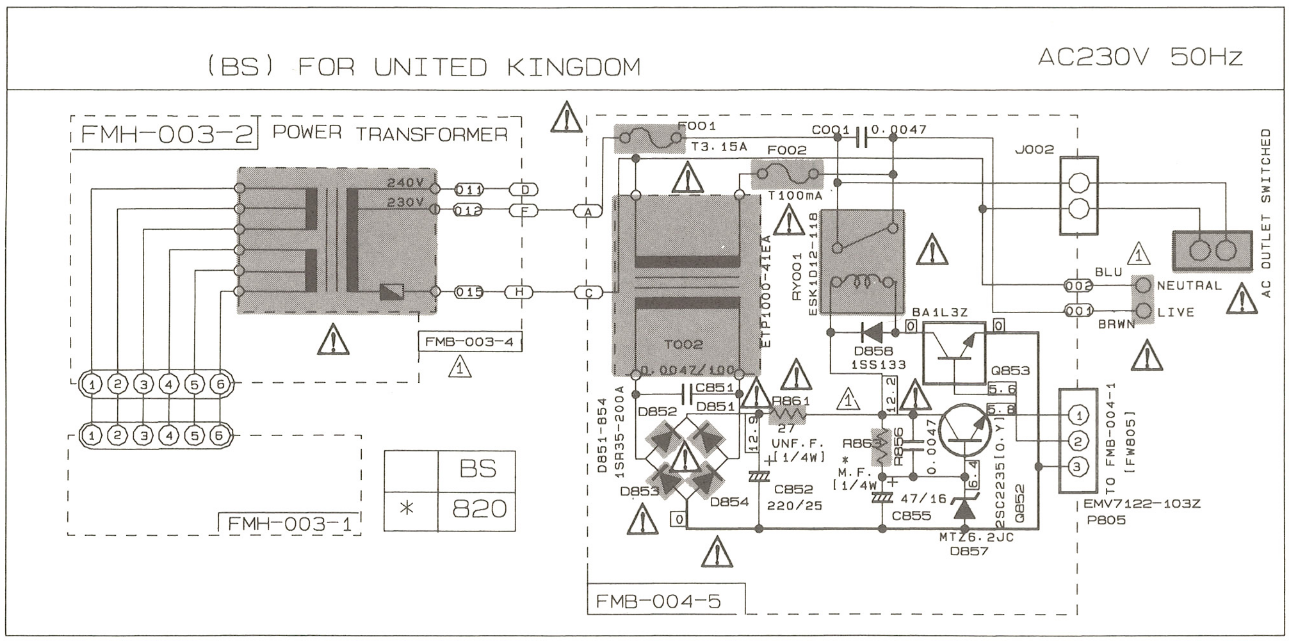

MPX
FM/AM IF DET
IC104 LA1265A
IC105 LA3401
T107
T105
CF102
XT103
W185
LP102
LP101
TP102
CENTER METER
COMPULINK
J102
RDS
XT201 EFO-EC4004
IC201 LC7073
IC202 SAA6579
XT202 VCA5057-001
Q123 BN1A4P
Q121 BN1A4P
Q124 BN1A4P
Q127 BA1L4M
D102 1SS133
D103 1SS133
D104 1SS113
D105 1SS113
D106 1SS113
D115 1SS113
L106 1m
L201 100u
R201 68 UNF.F [1/4W]
R202 47 UNF.F [1/4W]
P103
TO FMB-004-1 [FW101]
TO FMH-003-1 [FW103]
DST
GND
GND
R-CK
R-DATA
+15V
+5.6V
GND
R.OUT
GND
L.OUT


2SC2714 TR1
TR2 2SC2996
TR3 2SC2715
IF OUT
OSC OUT
L5
L6
L7
GND

(4) Power Primary Section


POWE
(EF, E
(G , G
FM
FWE

POWER SUPPLY BLOCK

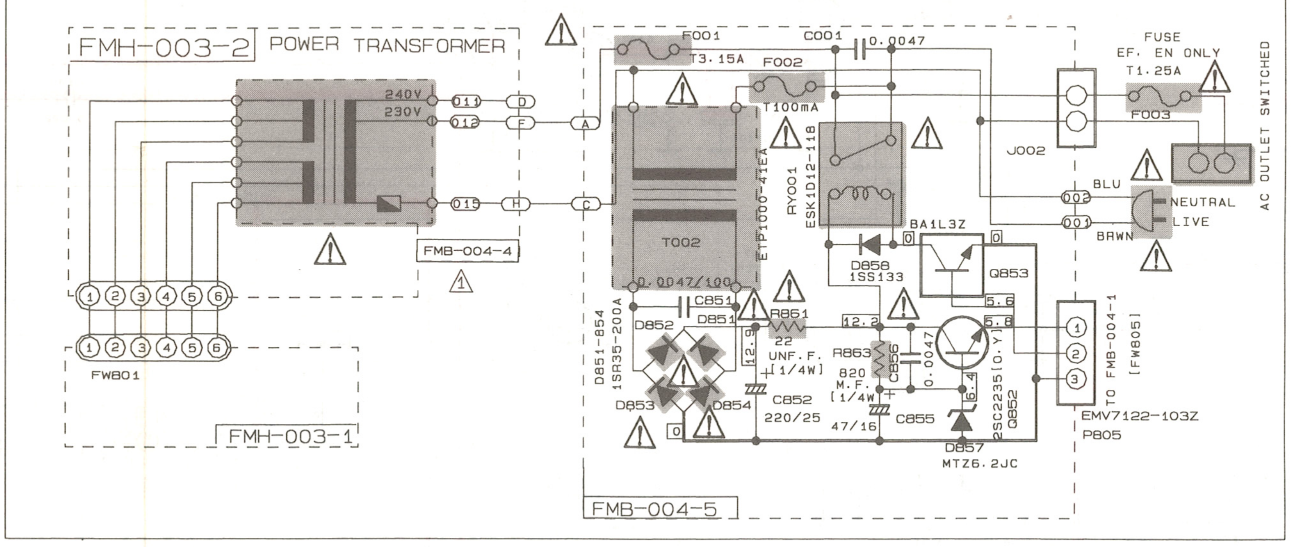

(BS) FOR UNITED KINGDOM
AC230V 50Hz
FMH-003-2
POWER TRANSFORMER
240V
230V
011
012
015
D
F
H
A
C
FMB-003-4
FMH-003-1
BS
* 820
F001
T3.15A
F002
T100mA
C001
0.0047
J002
AC OUTLET SWITCHED
ETP1000-41EA
T002
0.0047/100
RY001
ESK1D12-118
BLU
BRWN
002
001
NEUTRAL
LIVE
BA1L3Z
D858
1SS133
Q853
C851
D851-854
1SR35-200A
D851
D852
D853
D854
R861
27
UNF.F.
[1/4W]
12.9
12.2
C852
220/25
R863
*
M.F.
[1/4W]
R856
0.0047
47/16
C855
5.6
5.8
6.4
2SC2235[O.Y]
Q852
MTZ6.2JC
D857
TO FMB-004-1
[FW805]
EMV7122-103Z
P805
FMB-004-5

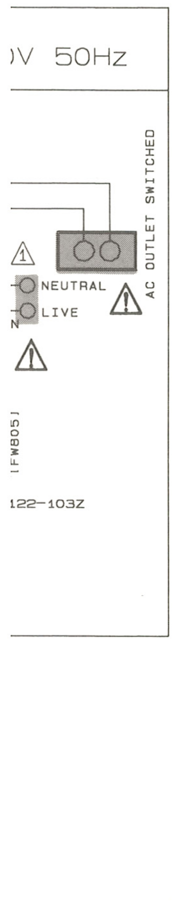
## POWER SUPPLY BLOCK

(EF, EN) (EN) FOR SCANDINAVIA (G) FOR GERMANY

(G , GI) (EF) FOR CONTINENTAL EUROPE (GI) FOR ITALY

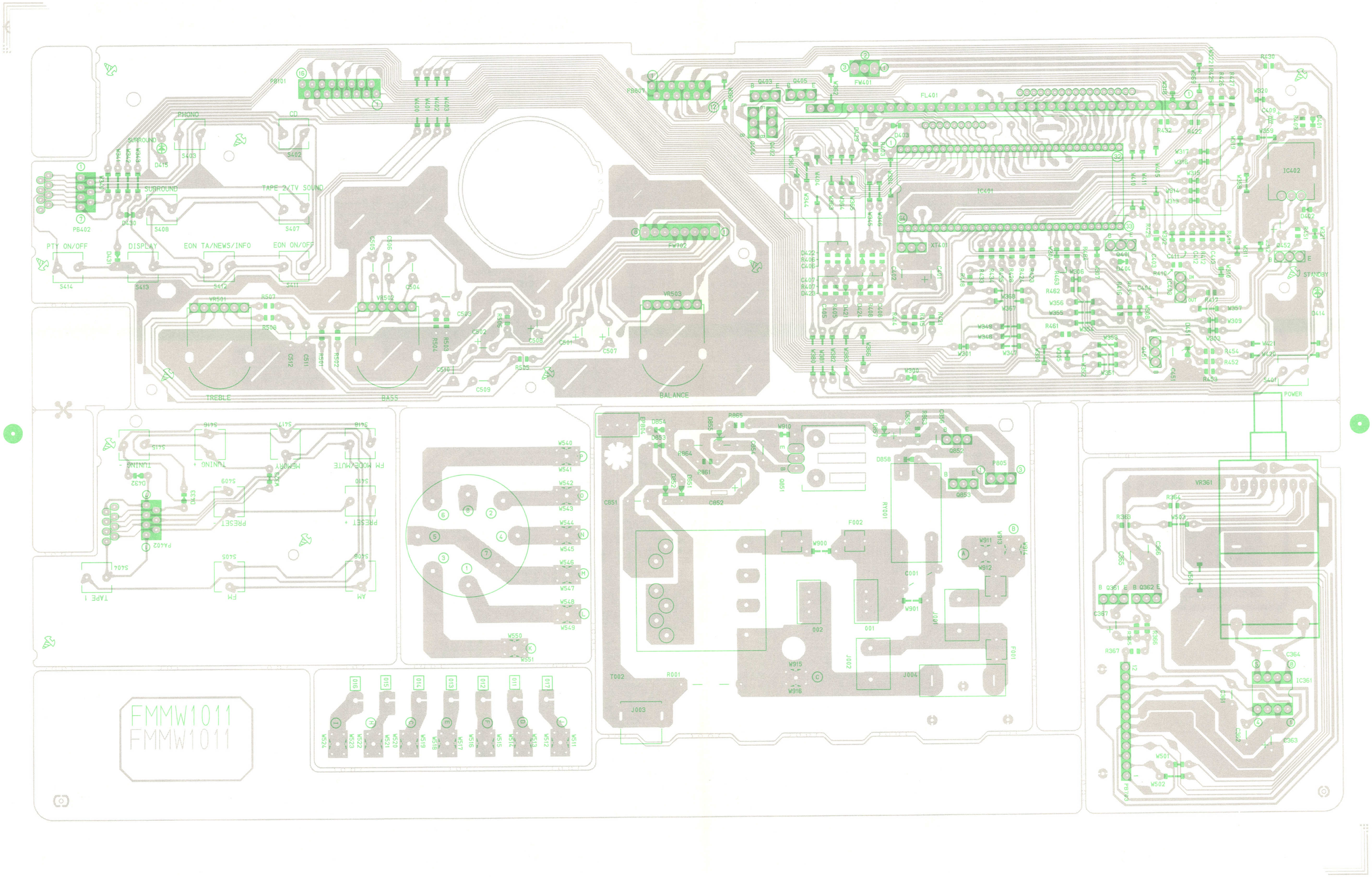
AC 230V 50Hz


FMH-003-2
POWER TRANSFORMER
240V
230V
011
012
015
D
F
H
A
C
FMB-004-4
1
FW801
FMH-003-1
F001
T3.15A
F002
T100mA
C001
0.0047
T002
ETP1000-41EA
0.0047/100
RY001
ESK1D12-118
D851-854
1SR35-200A
D852
D851
D853
D854
C851
R861
22
UNF.F.
[1/4W]
C852
220/25
12.9
12.2
R863
820
M.F.
[1/4W]
C856
0.0047
C855
47/16
D858
1SS133
BA1L3Z
Q853
5.6
5.8
6.4
2SC2235[O.Y]
Q852
D857
MTZ6.2JC
0
J002
FUSE
EF, EN ONLY
T1.25A
F003
AC OUTLET SWITCHED
BLU
NEUTRAL
LIVE
BRWN
002
001
TO FMB-004-1
[FW805]
EMV7122-103Z
P805
FMB-004-5

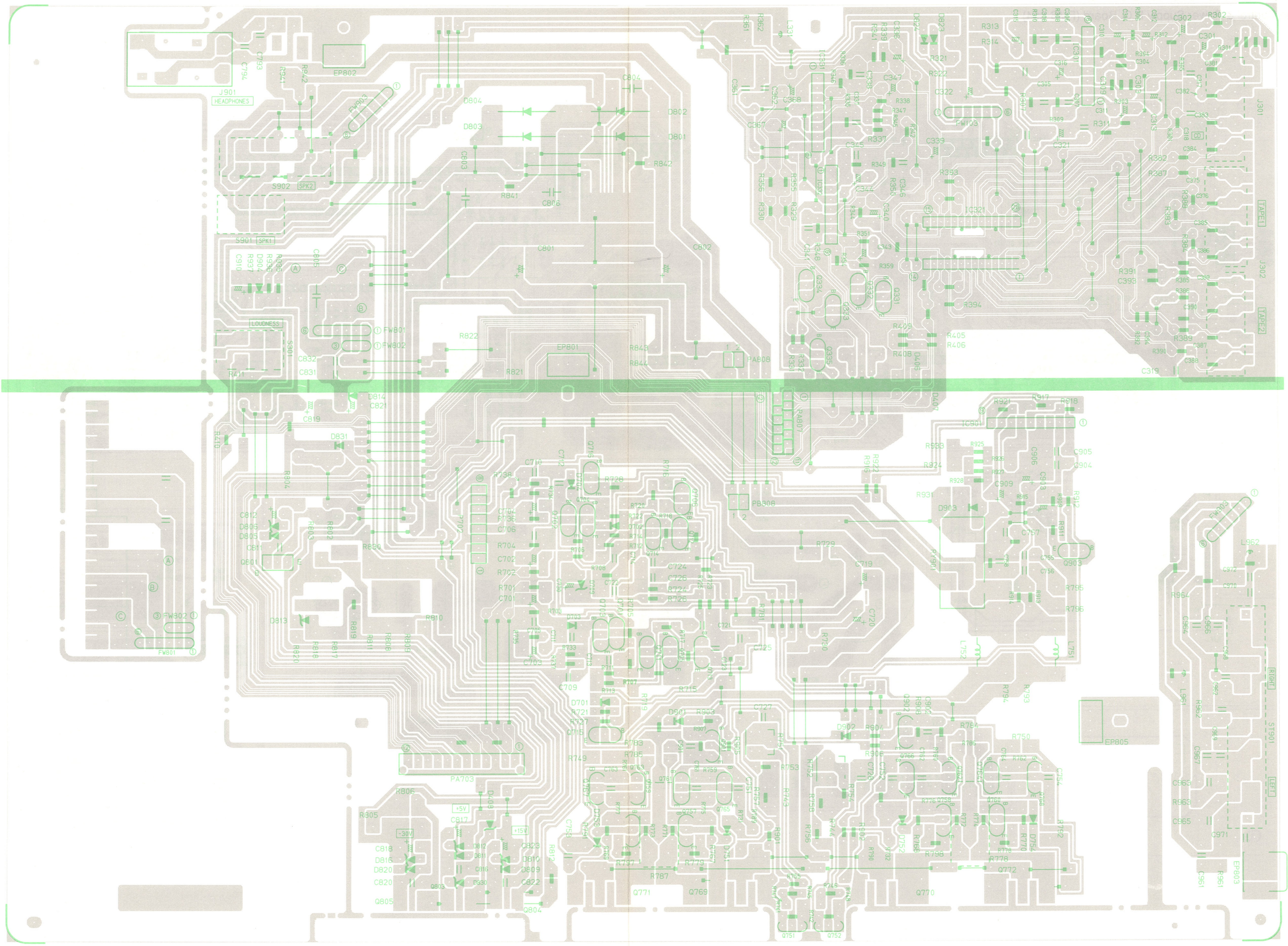

V 50Hz
AC OUTLET SWITCHED
NEUTRAL
LIVE
[FW805]
122-103Z

# Printed Circuit Board

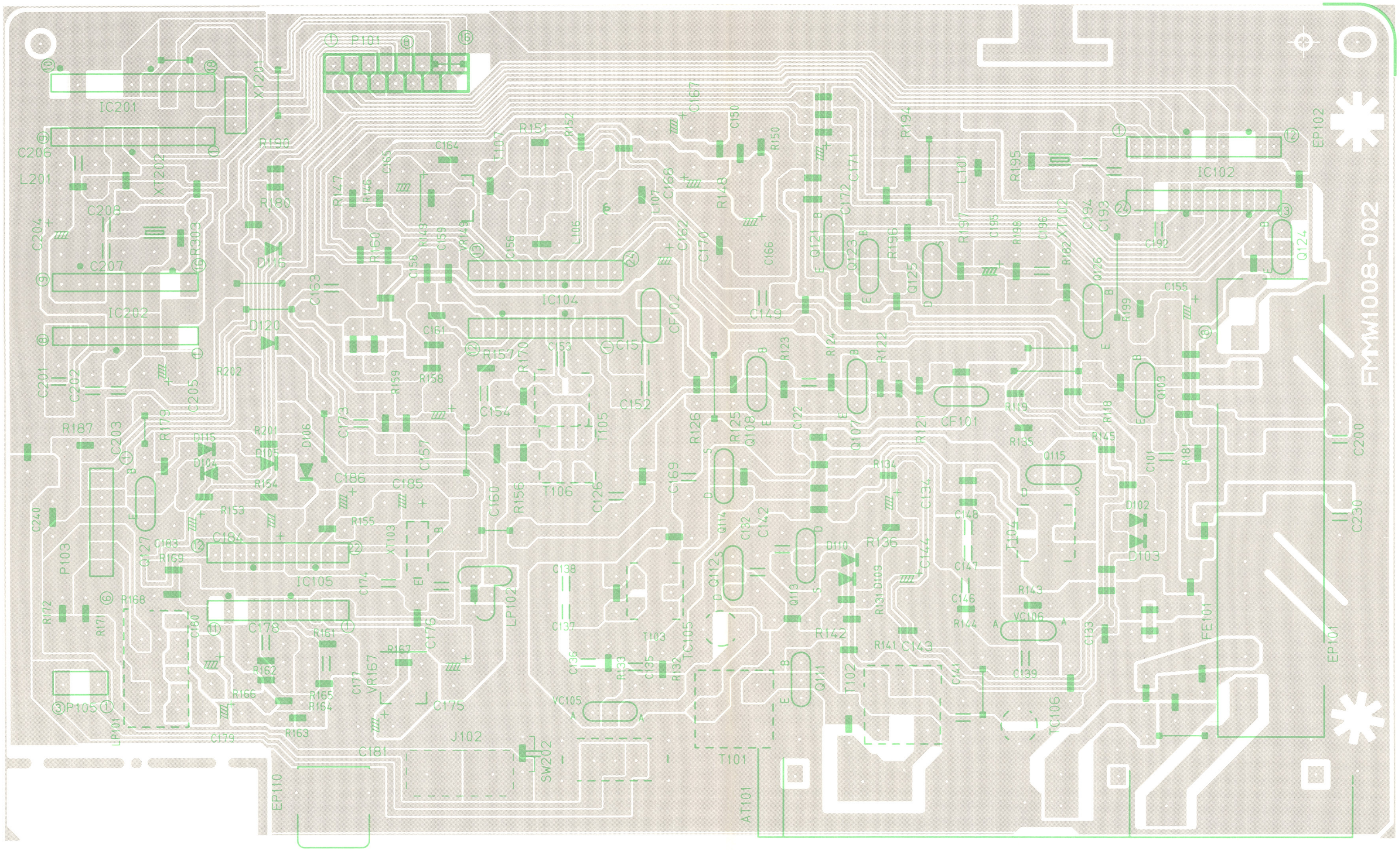
■ Front, Tone Control & Power Supply P.C. Board (FMB-004)



## ■ Amplifier Selector P.C. Board (FMH-003)


J901
HEADPHONES
EP802
S902
SPK2
S901
SPK1
LOUDNESS
FW801
FW802
D801
D802
D803
D804
C801
C802
C803
C804
C805
R841
R842
R821
R822
EP801
PA808
PB808
PA703
IC321
IC901
FW103
J301
J302
TAPE1
TAPE2
J901
EP805
EP803
S1901
RIGHT
LEFT
L751
L752
L961
L962
Q751
Q752
Q769
Q770
Q771
Q772
Q805
Q804
Q903
D701
D903
D902
D813
D831
R305
R806
+5V
+15V
-30V
C302
C301
R302
R313
R314
R391
C393
R394
R405
R406
R408
R729
R730
R787
R778
R750
R749
R753
R754
R793
R794
R795
R796
R964
C965
C971

## Tuner P.C. Board (EMA-002)


FMW1008-002
P101
IC201
IC202
IC104
IC105
IC102
XT201
XT202
XT102
L201
C205
C204
C207
C208
C201
C202
C203
C205
C240
P103
P105
R187
R179
R190
R180
R202
R201
D115
D120
D105
D106
D104
R151
R152
R147
R146
C165
C164
R160
R159
R158
C161
R157
R170
C154
C155
C152
C153
C156
C159
VR149
L107
L106
C167
C168
C162
C170
R148
C150
R150
C166
C149
CF102
C172
C171
Q121
Q123
Q125
R196
R197
R194
L101
R195
R198
C194
C193
C192
C195
C196
Q124
Q126
R199
C155
EP102
C200
C230
EP101
FE101
C133
C101
R181
D102
D103
R118
Q103
R145
R119
R135
CF101
Q115
Q104
C148
C147
C146
R143
VC106
R144
C139
R141
C143
R142
R136
R134
C134
C144
D110
D109
R131
Q113
Q112
Q114
C132
C142
R121
Q107
R122
R124
R123
C122
Q108
R125
R126
C169
T105
T106
C126
C160
R156
C157
C173
C185
C186
C183
C184
R153
R155
R154
R169
Q127
R168
R172
R171
C180
C178
R161
R162
R166
R165
R164
R163
C177
VR167
R167
C176
C175
C174
C103
LP102
LP101
C179
C181
J102
SW202
EP110
C138
C137
C136
R133
C135
R132
T103
TC105
VC105
T101
AT101
Q111
T102
C141
TC106

# PARTS LIST

**Note : All printed circuit borad assemblies are not available as service parts.**

## Contents

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# –MEMO–

## ■ PARTS LIST

Symbol No. M 1 M M

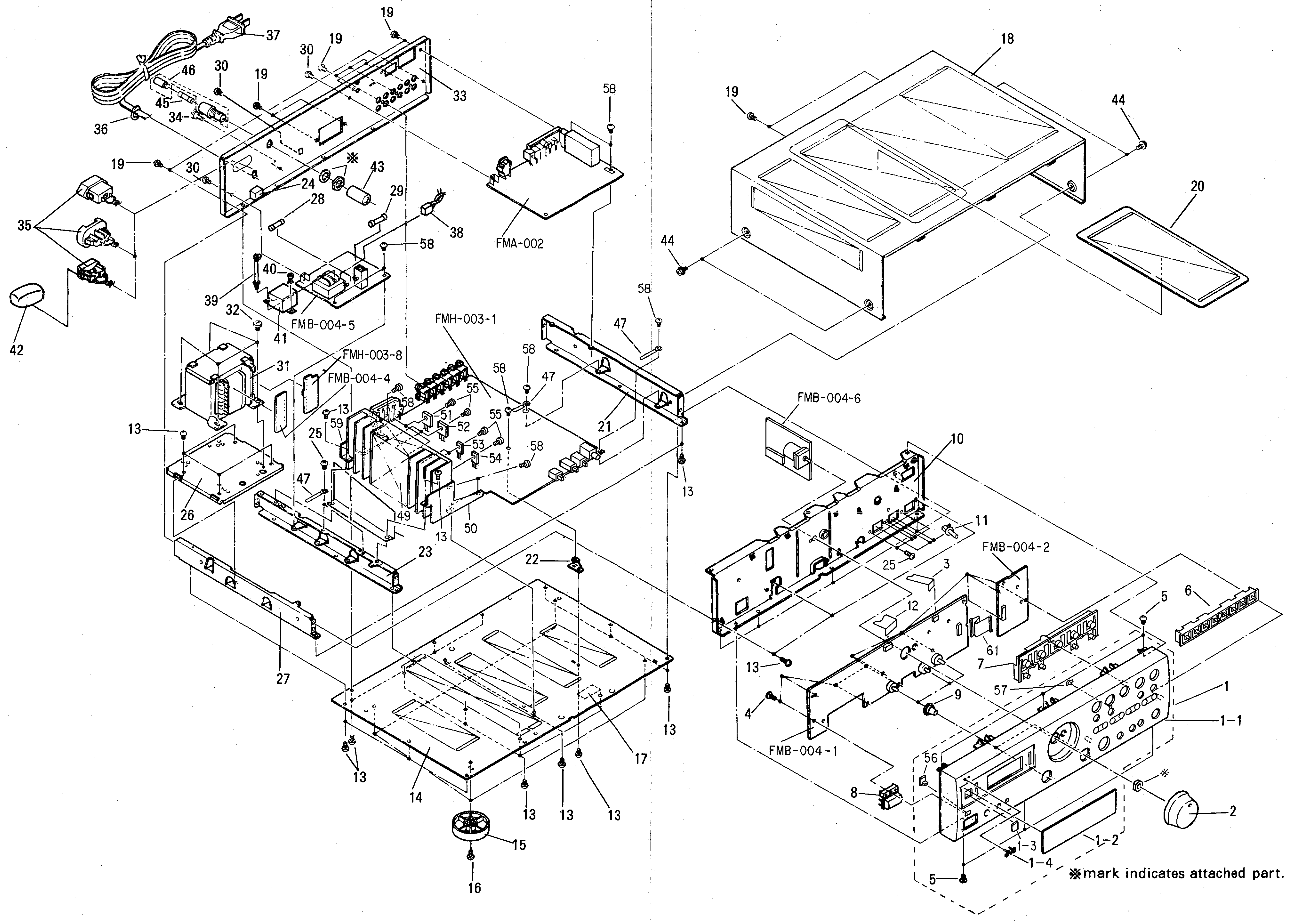
| ⚠ | Item | Part Number | Part Name | Q'ty | Description | Area |
|---|---|---|---|---|---|---|
|  | 1 | EFP-RX316RBKE(S | FRONT PANEL | 1 |  |  |
|  | 1-1 | FMJC1007-001 | FRONT PANEL | 1 |  |  |
|  | 1-2 | E308268-011SM | WINDOW SCREEN | 1 |  |  |
|  | 1-3 | E72436-006 | REMORT SCREEN | 1 |  |  |
|  | 1-4 | VJD5429-001 | JVC MARK | 1 |  |  |
|  | 2 | E309107-001SM | VOLUME KNOB | 1 |  |  |
|  | 3 | FMWF1216-23TTA |  | 1 |  |  |
|  | 4 | SDSF2608Z | SCREW | 9 |  |  |
|  | 6 | FMXP3008-001 | PUSH BUTTON | 1 |  |  |
|  | 7 | FMXP2001-001 | PUSH BUTTON | 1 |  |  |
|  | 8 | FMXP4004-001 | POWER BUTTON | 1 |  |  |
|  | 8 | SDSG3008M | TAPPING SCREW | 6 |  |  |
|  | 9 | FMXL4006-001 | BALANCE KNOB | 3 |  |  |
|  | 10 | FMKL1001-001 | FRONT BRACKET | 1 |  |  |
|  | 11 | E407321-002SM | PUSH BUTTON | 3 |  |  |
|  | 12 | FMWF1212-35TTB | FLAT WIRE ASSY | 1 |  |  |
|  | 13 | SBSG3008Z | TAPPING SCREW | 28 |  |  |
|  | 14 | E102371-005SM | CHASSIS BASE | 1 |  |  |
|  | 15 | E406379-008SS | FOOT | 4 |  |  |
|  | 16 | SBST3010Z | TAPPING SCREW | 4 |  |  |
|  | 17 | E70115-002 | CAUTION LABEL | 1 |  |  |
|  | 18 | E207049-007(S) | METAL COVER | 1 |  |  |
|  | 19 | SBSG3008M | TAPPING SCREW | 12 |  |  |
|  | 20 | E208294-001 | PROTECTOR COVER | 1 |  |  |
|  | 21 | E206957-001SM | SIDE BRACKET | 1 |  |  |
|  | 22 | E68587-222SM | BRACKET PLATE | 1 |  |  |
|  | 23 | E206958-004SM | CENTER BRACKET | 1 |  |  |
|  | 24 | E306805-023 | SPACER | 1 |  |  |
|  | 25 | SBST3006Z | TAPPING SCREW | 6 |  |  |
|  | 26 | E206959-003SM | TRANSFORMER BRACKET | 1 |  |  |
|  | 27 | E206956-001SM | SIDE BRACKET | 1 |  |  |
| ⚠ | 28 | QMF51E2-R10SBS | FUSE | 1 | F002(250V/100mA) | BS |
| ⚠ |  | QMF51A2-R10S | FUSE | 1 | F002(250V/100mA) | EF |
| ⚠ |  | QMF51A2-R10S | FUSE | 1 | F002(250V/100mA) | EN |
| ⚠ |  | QMF51A2-R10S | FUSE | 1 | F002(250V/100mA) | G |
| ⚠ |  | QMF51A2-R10S | FUSE | 1 | F002(250V/100mA) | GI |
| ⚠ | 29 | QMF51E2-3R15J1 | FUSE | 1 | F001(250V/3.15A) |  |
|  | 30 | SBST3006M | TAPPING SCREW | 3 |  |  |
| ⚠ | 31 | FMTP1200-02EABS | POWER TRANSFORMER | 1 |  | BS |
| ⚠ |  | FMTP1200-02EA | POWER TRANSFORMER | 1 |  | EF |
| ⚠ |  | FMTP1200-02EA | POWER TRANSFORMER | 1 |  | EN |
| ⚠ |  | FMTP1200-02EA | POWER TRANSFORMER | 1 |  | G |
| ⚠ |  | FMTP1200-02EA | POWER TRANSFORMER | 1 |  | GI |
|  | 32 | E65389-002 | SPECIAL SCREW | 4 |  |  |
|  | 33 | E207332-048SM | REAR PANEL | 1 |  | BS |
|  |  | E207332-049SM | REAR PANEL | 1 |  | EF |
|  |  | E207332-049SM | REAR PANEL | 1 |  | EN |
|  |  | E207332-048SM | REAR PANEL | 1 |  | G |
|  |  | E207332-048SM | REAR PANEL | 1 |  | GI |
|  | 34 | E73562-003 | SPECIAL SCREW | 1 |  |  |
| ⚠ | 35 | EMC0237-001BS | AC OUTLET | 1 |  | BS |
| ⚠ |  | EMC0236-001 | AC OUTLET | 1 |  | EF |
| ⚠ |  | EMC0236-001 | AC OUTLET | 1 |  | EN |
| ⚠ |  | EMC0236-001 | AC OUTLET | 1 |  | G |
| ⚠ |  | EMC0236-001 | AC OUTLET | 1 |  | GI |
| ⚠ | 36 | QHS3876-162 | CORD STOPPER | 1 |  |  |
| ⚠ | 37 | QMP5530-0085BS | POWER CORD | 1 |  | BS |
| ⚠ |  | QMP3900-200 | POWER CORD | 1 |  | EF |
| ⚠ |  | QMP3900-200 | POWER CORD | 1 |  | EN |
| ⚠ |  | QMP3900-200 | POWER CORD | 1 |  | G |
| ⚠ |  | QMP3900-200 | POWER CORD | 1 |  | GI |
|  | 38 | EWS282-002BS | SOCKET WIRE | 1 |  | BS |
|  |  | EWS282-002 | SOCKET WIRE | 1 |  | EF |
|  |  | EWS282-002 | SOCKET WIRE | 1 |  | EN |
|  |  | EWS282-002 | SOCKET WIRE | 1 |  | G |
|  |  | EWS282-002 | SOCKET WIRE | 1 |  | GI |
|  | 39 | E306232-002 | FASTENER | 1 |  |  |
|  | 40 | E48729-008 | PLASTIC RIVET | 1 |  |  |
|  | 41 | E406528-003 | PRIMARY COVER | 1 |  |  |
|  | 42 | E406079-001 | COVER | 1 |  | BS |
|  | 43 | E69291-001 | FUSE COVER | 1 |  | EF |
|  |  | E69291-001 | FUSE COVER | 1 |  | EN |
|  | 44 | E61660-004 | SPECIAL SCREW | 4 |  |  |
| ⚠ | 45 | QMF51E2-1R25 | FUSE | 1 | (250V/1.25A) | EF |
| ⚠ |  | QMF51E2-1R25 | FUSE | 1 | (250V/1.25A) | EN |
| ⚠ | 46 | QMG0301-003 | FUSE HOLDER | 1 |  | EF |
| ⚠ |  | QMG0301-003 | FUSE HOLDER | 1 |  | EN |
|  | 47 | VKZ4001-111S | WIRE CLAMP | 2 |  |  |
|  | 49 | E308271-005 | HEAT SINK | 1 |  |  |
|  | 50 | E307874-001SM | HEAT SINK BRACKET | 1 |  |  |
|  | 51 | 2SB1429LB(R,O) | SI.TRANSISTOR | 2 |  |  |
|  | 52 | 2SD2155LB(R,O) | SI.TRANSISTOR | 2 |  |  |
|  | 53 | 2SD2061F(E,F) | SI.TRANSISTOR | 2 |  |  |
|  | 54 | 2SB1187F(E,F) | SI.TRANSISTOR | 1 |  |  |
|  | 55 | E73525-003SS | SCREW | 7 |  |  |
|  | 56 | FMJK4005-001 | INDICATOR LENS | 1 |  |  |
|  | 57 | FMJK4004-001 | INDICATOR LENS | 1 |  |  |
|  | 58 | SBSG3008CC | TAPPING SCREW | 11 |  |  |
|  | 59 | E307874-002SM | HEAT SINK BRACKET | 1 |  |  |
|  | 60 | FMPK3001-001 | INSULATOR SHEET | 1 |  |  |
|  | 61 | FMWH0001-001 | FLAT WIRE ASSY | 1 |  |  |
|  | - | QHW4110-001 | WIRE CLAMP | 1 |  |  |
|  | - | QZL1007-001 | BEAB LABEL | 1 |  | BS |
|  | - | QWE882-14FF | VINYL WIRE | 1 |  | EF |
|  | - | QZL1031-101 | LABEL | 1 |  | EF |
|  | - | QWE882-14FF | VINYL WIRE | 1 |  | EN |
|  | - | FMND4001-002 | FTZ LABEL | 1 |  | G |
|  | - | E408450-094 | CE LABEL | 1 |  |  |

**The Marks for Designated Areas**

BS .. the U.K.
EF ....... Continental Europe
EN ....... Scandinavia
G ... Germany
GI ... Itary
No mark indicates all area.

# General Exploded View and Parts List

Symbol No. M 1 M M

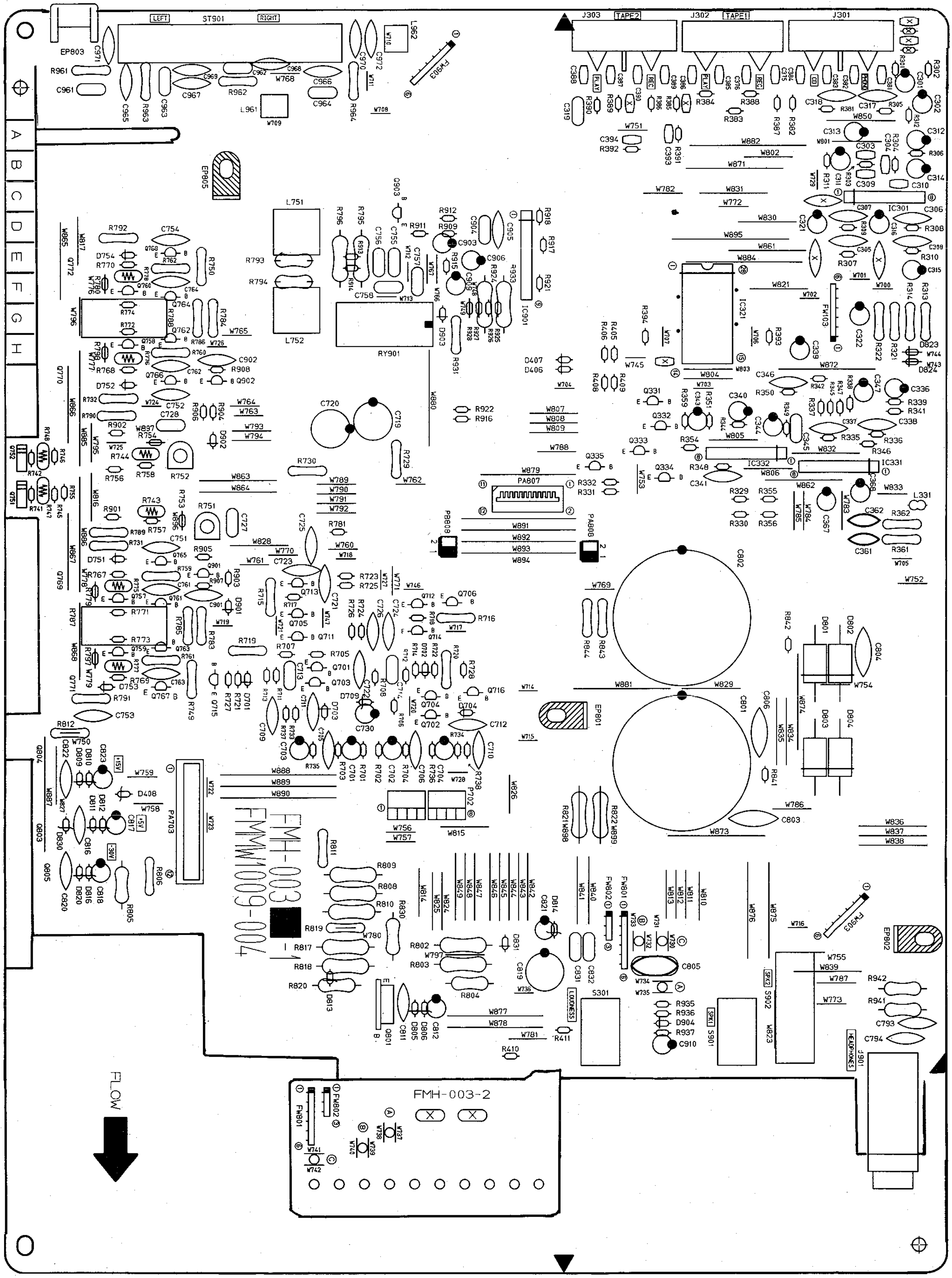

19
37
30
19
46
30
19
33
58
45
34
36
19
30
※
43
24
28
29
38
58
FMA-002
35
40
39
32
FMB-004-5
41
42
31
FMH-003-8
FMB-004-4
FMH-003-1
58
47
58
58
47
55
51
52
55
53
54
58
13
59
25
13
26
47
49
13
50
21
13
23
22
27
14
13
15
16
13
13
13
17
13
18
19
44
20
44
FMB-004-6
10
11
25
FMB-004-2
3
12
5
6
61
7
13
57
1
1-1
4
9
FMB-004-1
56
8
※
2
1-3
1-4
1-2
5

※mark indicates attached part.

# Printed Circuit Board Ass'y and Parts List

## ■ FMH-003 ☐ Amplifier & Selector PC Board Ass'y

Note: FMH-003 ☐ varies according to the areas employed.See note (1) when placing an order.


LEFT
ST901
RIGHT
J303 TAPE2
J302 TAPE1
J301
PLAY
REC
CD
PHONO
A
B
C
D
E
F
G
H
EP803
EP805
EP801
EP802
L751
L752
L961
L962
RY901
IC901
IC301
IC321
IC331
IC332
PA807
PB808
PA808
PA703
P702
FW103
FW903
FW801
FW802
S301
LOUDNESS
S901
SPK1
S902
SPK2
J901
HEADPHONES
C802
C801
C720
C719
FMH-003
FMMW1009-004
FMH-003-2
FLOW
+15V
+5V
-30V

Note (1)

| PC Board Ass'y | Version | Designated Areas |
|---|---|---|
| FMH-003 F | BS | the U.K. |
| FMH-003 E | EF | Continental Europe |
| | EN | Scandinavia |
| | G | Germany |
| | GI | Italy |

## TRANSISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | Q331 | BA1L4M | DIGITAL TRA NEC | |
| | Q332 | 2SD655(E,F) | SI.TRANSIST HITACHI | |
| | Q333 | 2SD2144S(VW) | SI.TRANSIST ROHM | |
| | Q334 | 2SD2144S(VW) | SI.TRANSIST ROHM | |
| | Q335 | BN1L4M | D.TR.I.M | |
| | Q701 | 2SC1775AV(F1) | SI.TRANSIST HITACHI | |
| | Q702 | 2SC1775AV(F1) | SI.TRANSIST HITACHI | |
| | Q703 | 2SC1775AV(F1) | SI.TRANSIST HITACHI | |
| | Q704 | 2SC1775AV(F1) | SI.TRANSIST HITACHI | |
| | Q705 | 2SA1038(R,S) | SI.TRANSIST ROHM | |
| | Q706 | 2SA1038(R,S) | SI.TRANSIST ROHM | |
| | Q711 | 2SA1038(R,S) | SI.TRANSIST ROHM | |
| | Q712 | 2SA1038(R,S) | SI.TRANSIST ROHM | |
| | Q715 | 2SC2389(S,E) | SI.TRANSIST ROHM | |
| | Q716 | 2SC2389(S,E) | SI.TRANSIST ROHM | |
| | Q751 | 2SD636 | SI.TRANSIST MATSUSHITA | |
| | Q752 | 2SD636 | SI.TRANSIST MATSUSHITA | |
| | Q757 | 2SC945A | SI.TRANSIST NEC | |
| | Q758 | 2SC945A | SI.TRANSIST NEC | |
| | Q759 | 2SA733A(P,K) | SI.TRANSIST NEC | |
| | Q760 | 2SA733A(P,K) | SI.TRANSIST NEC | |
| | Q761 | 2SC2240(BL) | SI.TRANSIST | |
| | Q762 | 2SC2240(BL) | SI.TRANSIST | |
| | Q763 | 2SA970(GR) | SI.TRANSIST TOSHIBA | |
| | Q764 | 2SA970(GR) | SI.TRANSIST TOSHIBA | |
| | Q765 | 2SC2235(O,Y) | SI.TRANSIST TOSHIBA | |
| | Q766 | 2SC2235(O,Y) | SI.TRANSIST TOSHIBA | |
| | Q767 | 2SA965(Y) | SI.TRANSIST TOSHIBA | |
| | Q768 | 2SA965(Y) | SI.TRANSIST TOSHIBA | |
| | Q801 | 2SB1187(F,G) | SI.TRANSIST ROHM | |
| | Q901 | 2SC1775AV(F1) | SI.TRANSIST HITACHI | |
| | Q902 | 2SC1775AV(F1) | SI.TRANSIST HITACHI | |
| | Q903 | 2SA1038(R,S) | SI.TRANSIST ROHM | |

## I. C. S.

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | IC301 | NJM4580LD | I.C(MONO-AN DAINICHI | |
| | IC321 | TC9164N | I.C(DIGI-MO TOSHIBA | |
| | IC331 | BA15218N | I.C(MONO-AN ROHM | |
| | IC332 | BA15218N | I.C(MONO-AN ROHM | |
| | IC901 | TA7317P | I.C(MONO-AN TOSHIBA | |

## DIODES

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | D406 | 1SS133 | SI.DIODE ROHM | |
| | D407 | 1SS133 | SI.DIODE ROHM | |
| | D408 | MTZ6.8JC | ZENER DIODE ROHM | |
| | D701 | 1SS133 | SI.DIODE ROHM | |
| | D702 | 1SS133 | SI.DIODE ROHM | |
| | D703 | 1SS133 | SI.DIODE ROHM | |
| | D704 | 1SS133 | SI.DIODE ROHM | |
| | D709 | MTZ18JC | ZENER DIODE ROHM | |
| | D751 | 1SS133 | SI.DIODE ROHM | |
| | D752 | 1SS133 | SI.DIODE ROHM | |
| | D753 | 1SS133 | SI.DIODE ROHM | |
| | D754 | 1SS133 | SI.DIODE ROHM | |
| ⚠ | D801 | 30DF2SFC | SI.DIODE NIHONINTER | |
| ⚠ | D802 | 30DF2SFC | SI.DIODE NIHONINTER | |
| ⚠ | D803 | 30DF2SFC | SI.DIODE NIHONINTER | |
| ⚠ | D804 | 30DF2SFC | SI.DIODE NIHONINTER | |
| | D805 | 1SS133 | SI.DIODE ROHM | |
| | D806 | MTZ16JC | ZENER DIODE ROHM | |
| | D809 | 1SS133 | SI.DIODE ROHM | |
| | D810 | MTZ16JC | ZENER DIODE ROHM | |
| | D811 | 1SS133 | SI.DIODE ROHM | |
| | D812 | MTZ7.5JC | ZENER DIODE ROHM | |
| | D813 | MTZ20JC | ZENER DIODE ROHM | |
| | D814 | MTZ5.1JC | ZENER DIODE ROHM | |
| | D816 | MTZ20JC | ZENER DIODE ROHM | |

⚠ : SAFETY PARTS

## DIODES

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | D820 | 1SS133 | SI.DIODE ROHM | |
| | D830 | MTZ3.3JB | ZENER DIODE ROHM | |
| | D831 | 1SS133 | SI.DIODE ROHM | |
| | D901 | 1SS133 | SI.DIODE ROHM | |
| | D902 | 1SS133 | SI.DIODE ROHM | |
| | D903 | 1SS133 | SI.DIODE ROHM | |
| | D904 | 1SS133 | SI.DIODE ROHM | |

## CAPACITORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | C301 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C302 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C303 | QCBB1HK-471Y | 470PF 50V CER.CAPACI | |
| | C304 | QCBB1HK-471Y | 470PF 50V CER.CAPACI | |
| | C305 | QCY31HK-182Z | 1800PF 50V CER.CAPACI | |
| | C306 | QCY31HK-182Z | 1800PF 50V CER.CAPACI | |
| | C307 | QCY31HK-682Z | 6800PF 50V CER.CAPACI | |
| | C308 | QCY31HK-682Z | 6800PF 50V CER.CAPACI | |
| | C309 | QCBB1HK-101Y | 100PF 50V CER.CAPACI | |
| | C310 | QCBB1HK-101Y | 100PF 50V CER.CAPACI | |
| | C311 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C312 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C313 | QETB1AM-107 | 100MF 10V AL E.CAPAC | |
| | C314 | QETB1AM-107 | 100MF 10V AL E.CAPAC | |
| | C315 | QETB1CM-476 | 47MF 16V AL E.CAPAC | |
| | C316 | QETB1CM-476 | 47MF 16V AL E.CAPAC | |
| | C317 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C318 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C319 | QFV81HJ-154 | 0.15MF 50V THIN FILM | |
| | C321 | QETB1EM-226 | 22MF 25V AL E.CAPAC | |
| | C322 | QETB1EM-226 | 22MF 25V AL E.CAPAC | |
| | C336 | QETB1CM-226 | 22MF 16V E.CAPACITO | |
| | C337 | QCS21HJ-100 | 10PF 50V CER.CAPACI | |
| | C338 | QCS21HJ-100 | 10PF 50V CER.CAPACI | |
| | C339 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C340 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C341 | QCS31HJ-330Z | 33PF 50V CER.CAPACI | |
| | C343 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C344 | QETB1HM-105 | 1MF 50V AL E.CAPAC | |
| | C345 | QFLB1HJ-392 | 3900PF 50V MYLAR CAPA | |
| | C346 | QCS21HJ-100 | 10PF 50V CER.CAPACI | |
| | C347 | QETB1EM-226 | 22MF 25V AL E.CAPAC | |
| | C361 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C362 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C367 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C368 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C375 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C376 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C381 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C382 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C383 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C384 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C385 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C386 | QCBB1HK-331Y | 330PF 50V CER.CAPACI | |
| | C387 | QCBB1HK-561Y | 560PF 50V CER.CAPACI | |
| | C388 | QCBB1HK-561Y | 560PF 50V CER.CAPACI | |
| | C389 | QCBB1HK-221Y | 220PF 50V CER.CAPACI | |
| | C390 | QCBB1HK-221Y | 220PF 50V CER.CAPACI | |
| | C393 | QCBB1HK-221Y | 220PF 50V CER.CAPACI | |
| | C394 | QCBB1HK-221Y | 220PF 50V CER.CAPACI | |
| | C701 | QETB1HM-106 | 10MF 50V E.CAPACITO | |
| | C702 | QETB1HM-106 | 10MF 50V E.CAPACITO | |
| | C703 | QETB1EM-476 | 47MF 25V AL E.CAPAC | |
| | C704 | QETB1EM-476 | 47MF 25V AL E.CAPAC | |
| | C705 | QCS21HJ-271A | 270PF 50V CER.CAPACI | |
| | C706 | QCS21HJ-271A | 270PF 50V CER.CAPACI | |
| | C709 | QCS21HJ-220A | 22PF 50V CER.CAPACI | |
| | C710 | QCS21HJ-220A | 22PF 50V CER.CAPACI | |
| | C711 | QCS21HJ-101A | 100PF 50V CER.CAPACI | |
| | C712 | QCS21HJ-101A | 100PF 50V CER.CAPACI | |
| | C713 | QFLB1HJ-152 | 1500PF 50V MYLAR CAPA | |
| | C714 | QFLB1HJ-152 | 1500PF 50V MYLAR CAPA | |
| | C719 | QETB1JM-476 | 47MF 63V AL E.CAPAC | |
| | C720 | QETB1JM-476 | 47MF 63V AL E.CAPAC | |
| | C721 | QCS22HJ-220 | 22PF 500V CER.CAPACI | |
| | C722 | QCS22HJ-220 | 22PF 500V CER.CAPACI | |
| | C723 | QCS21HJ-680A | 68PF 50V CER.CAPACI | |
| | C724 | QCS21HJ-680A | 68PF 50V CER.CAPACI | |
| | C725 | QCS21HJ-680A | 68PF 50V CER.CAPACI | |
| | C726 | QCS21HJ-680A | 68PF 50V CER.CAPACI | |
| | C727 | QFLB1HK-473 | 0.047MF 50V MYLAR CAPA | |
| | C728 | QFLB1HK-473 | 0.047MF 50V MYLAR CAPA | |
| | C730 | QETB1EM-476 | 47MF 25V AL E.CAPAC | |
| | C751 | QCS22HJ-470A | 47PF 500V CER.CAPACI | |
| | C752 | QCS22HJ-470A | 47PF 500V CER.CAPACI | |
| | C753 | QCS22HJ-470A | 47PF 500V CER.CAPACI | |
| | C754 | QCS22HJ-470A | 47PF 500V CER.CAPACI | |
| | C755 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C756 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C757 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |

## CAPACITORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | C758 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C761 | QCF21HP-473A | 0.047MF 50V CER.CAPACI | |
| | C762 | QCF21HP-473A | 0.047MF 50V CER.CAPACI | |
| | C763 | QCF21HP-473A | 0.047MF 50V CER.CAPACI | |
| | C764 | QCF21HP-473A | 0.047MF 50V CER.CAPACI | |
| | C793 | QCS21HJ-221 | 220PF 50V CER.CAPACI | |
| | C794 | QCS21HJ-221 | 220PF 50V CER.CAPACI | |
| | C801 | EEW5613-688T | 6800MF E.CAPACITO | |
| | C802 | EEW5613-688T | 6800MF E.CAPACITO | |
| | C803 | QCE22HP-103A | 0.01MF 500V CER.CAPACI | |
| | C804 | QCE22HP-103A | 0.01MF 500V CER.CAPACI | |
| | C805 | QFN82CJ-224 | 0.22MF 160V MYLAR CAPA | |
| | C811 | QCF21HP-472 | 4700PF 50V CER.CAPACI | |
| | C812 | QETB1HM-107 | 100MF 50V E.CAPACITO | |
| | C816 | QCF21HP-472 | 4700PF 50V CER.CAPACI | |
| | C817 | QETB1EM-107 | 100MF 25V AL E.CAPAC | |
| | C818 | QETB1HM-476 | 47MF 50V E.CAPACITO | |
| | C819 | QETB1HM-107 | 100MF 50V E.CAPACITO | |
| | C820 | QCF21HP-472 | 4700PF 50V CER.CAPACI | |
| | C821 | QETB1EM-107 | 100MF 25V AL E.CAPAC | |
| | C822 | QCF21HP-472 | 4700PF 50V CER.CAPACI | |
| | C823 | QETB1EM-107 | 100MF 25V AL E.CAPAC | |
| | C831 | QFLB1HJ-223 | 0.022MF 50V MYLAR CAPA | |
| | C832 | QFLB1HJ-223 | 0.022MF 50V MYLAR CAPA | |
| | C901 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C902 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C903 | QETB1HM-226E | 22MF 50V E.CAPACITO | |
| | C904 | QFLB1HJ-223 | 0.022MF 50V MYLAR CAPA | |
| | C905 | QCY31HK-102Z | 1000PF 50V CER.CAPACI | |
| | C906 | QETB1AM-476 | 47MF 10V E.CAPACITO | |
| | C909 | QETB1CM-226 | 22MF 16V E.CAPACITO | |
| | C910 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C961 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C962 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C963 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C964 | QFLB1HJ-473 | 0.047MF 50V MYLAR CAPA | |
| | C965 | QCS21HJ-101A | 100PF 50V CER.CAPACI | |
| | C966 | QCS31HJ-471Z | 470PF 50V CER.CAPACI | |
| | C967 | QCS31HJ-151Z | 150PF 50V CER.CAPACI | |
| | C968 | QCS31HJ-471Z | 470PF 50V CER.CAPACI | |
| | C969 | QCS31HJ-471Z | 470PF 50V CER.CAPACI | |
| | C970 | QCS31HJ-391Z | 390PF 50V CER.CAPACI | |
| | C971 | QCS31HJ-471Z | 470PF 50V CER.CAPACI | |
| | C972 | QCS31HJ-471Z | 470PF 50V CER.CAPACI | |

## RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | R301 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R302 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R303 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R304 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R305 | QRD161J-621 | 620 1/6W CARBON RES | |
| | R306 | QRD161J-621 | 620 1/6W CARBON RES | |
| | R307 | QRD161J-393 | 39K 1/6W CARBON RES | |
| | R308 | QRD161J-393 | 39K 1/6W CARBON RES | |
| | R309 | QRD161J-474 | 470K 1/6W CARBON RES | |
| | R310 | QRD161J-474 | 470K 1/6W CARBON RES | |
| | R311 | QRD161J-104 | 100K 1/6W CARBON RES | |
| | R312 | QRD161J-104 | 100K 1/6W CARBON RES | |
| ⚠ | R313 | QRD14CJ-391SX | 390 1/4W UNF.CARBON | |
| ⚠ | R314 | QRD14CJ-391SX | 390 1/4W UNF.CARBON | |
| ⚠ | R321 | QRZ0077-470 | 47 1/4W FUSIBLE RE | |
| ⚠ | R322 | QRZ0077-470 | 47 1/4W FUSIBLE RE | |
| | R329 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R330 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R331 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R332 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R335 | QRD161J-303Y | 30K 1/6W CARBON RES | |
| | R336 | QRD161J-333 | 33K 1/6W CARBON RES | |
| | R337 | QRD161J-273 | 27K 1/6W CARBON RES | |
| | R338 | QRD161J-474 | 470K 1/6W CARBON RES | |
| | R339 | QRD161J-303Y | 30K 1/6W CARBON RES | |
| | R341 | QRD161J-303Y | 30K 1/6W CARBON RES | |
| | R342 | QRD167J-334 | 330K 1/6W CARBON RES | |
| | R344 | QRD167J-334 | 330K 1/6W CARBON RES | |
| | R345 | QRD161J-273 | 27K 1/6W CARBON RES | |
| | R346 | QRD161J-303Y | 30K 1/6W CARBON RES | |
| | R347 | QRD161J-273 | 27K 1/6W CARBON RES | |
| | R348 | QRD167J-334 | 330K 1/6W CARBON RES | |
| | R349 | QRD167J-682 | 6.8K 1/6W CARBON RES | |
| | R350 | QRD167J-334 | 330K 1/6W CARBON RES | |
| | R351 | QRD167J-332 | 3.3K 1/6W CARBON RES | |
| | R354 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R355 | QRD161J-104 | 100K 1/6W CARBON RES | |
| | R356 | QRD161J-104 | 100K 1/6W CARBON RES | |
| | R359 | QRD161J-564 | 560K 1/6W CARBON RES | |
| ⚠ | R361 | QRZ0077-680 | 68 1/4W FUSIBLE RE | |
| ⚠ | R362 | QRZ0077-680 | 68 1/4W FUSIBLE RE | |
| | R381 | QRD161J-471 | 470 1/6W CARBON RES | |
| | R382 | QRD161J-471 | 470 1/6W CARBON RES | |
| | R383 | QRD161J-471 | 470 1/6W CARBON RES | |
| | R384 | QRD161J-471 | 470 1/6W CARBON RES | |

## RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | R385 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R386 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R387 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R388 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R389 | QRD161J-471 | 470 1/6W CARBON RES | |
| | R390 | QRD161J-471 | 470 1/6W CARBON RES | |
| | R391 | QRD161J-105 | 1M 1/6W CARBON RES | |
| | R392 | QRD161J-105 | 1M 1/6W CARBON RES | |
| | R393 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R394 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R405 | QRD161J-512 | 5.1K 1/6W CARBON RES | |
| | R406 | QRD161J-512 | 5.1K 1/6W CARBON RES | |
| | R408 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R409 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R410 | QRD161J-221 | 220 1/6W CARBON RES | |
| | R411 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R701 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R702 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R703 | QRD161J-104 | 100K 1/6W CARBON RES | |
| | R704 | QRD161J-104 | 100K 1/6W CARBON RES | |
| | R705 | QRD167J-822 | 8.2K 1/6W CARBON RES | |
| | R706 | QRD167J-822 | 8.2K 1/6W CARBON RES | |
| | R707 | QRD161J-101 | 100 1/6W CARBON RES | |
| | R708 | QRD161J-101 | 100 1/6W CARBON RES | |
| | R711 | QRD161J-202 | 2K 1/6W CARBON RES | |
| | R712 | QRD161J-202 | 2K 1/6W CARBON RES | |
| | R713 | QRD161J-202 | 2K 1/6W CARBON RES | |
| | R714 | QRD161J-202 | 2K 1/6W CARBON RES | |
| ⚠ | R715 | QRD14CJ-151SX | 150 1/4W UNF.CARBON | |
| ⚠ | R716 | QRD14CJ-151SX | 150 1/4W UNF.CARBON | |
| ⚠ | R719 | QRD12CJ-153SX | 15K 1/2W UNF.CARBON | |
| ⚠ | R720 | QRD12CJ-153SX | 15K 1/2W UNF.CARBON | |
| | R721 | QRD161J-391 | 390 1/6W CARBON RES | |
| | R722 | QRD161J-391 | 390 1/6W CARBON RES | |
| | R723 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R724 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R727 | QRD161J-391 | 390 1/6W CARBON RES | |
| | R728 | QRD161J-391 | 390 1/6W CARBON RES | |
| ⚠ | R729 | QRD14CJ-680SX | 68 1/4W UNF.CARBON | |
| ⚠ | R730 | QRD14CJ-680SX | 68 1/4W UNF.CARBON | |
| ⚠ | R731 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| ⚠ | R732 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| | R733 | QRD161J-133Y | 13K 1/6W CARBON RES | |
| | R734 | QRD161J-133Y | 13K 1/6W CARBON RES | |
| | R735 | QRD161J-821 | 820 1/6W CARBON RES | |
| | R736 | QRD161J-821 | 820 1/6W CARBON RES | |
| | R737 | QRD161J-823 | 82K 1/6W CARBON RES | |
| | R738 | QRD161J-823 | 82K 1/6W CARBON RES | |
| | R741 | QRD161J-431 | 430 1/6W CARBON RES | |
| | R742 | QRD161J-431 | 430 1/6W CARBON RES | |
| | R745 | QRD161J-102 | 1K 1/6W CARBON RES | |
| | R746 | QRD161J-102 | 1K 1/6W CARBON RES | |
| ⚠ | R747 | ERT-D2WHL202S | 2K 1/4W NEGATIVE T | |
| ⚠ | R748 | ERT-D2WHL202S | 2K 1/4W NEGATIVE T | |
| ⚠ | R749 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| ⚠ | R750 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| | R751 | QVPA601-501A | 500 TRIMMER RE | |
| | R752 | QVPA601-501A | 500 TRIMMER RE | |
| | R755 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R756 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| ⚠ | R759 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| ⚠ | R760 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| ⚠ | R761 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| ⚠ | R762 | QRD14CJ-100SX | 10 1/4W UNF.CARBON | |
| | R767 | QRD161J-820 | 82 1/6W CARBON RES | |
| | R768 | QRD161J-820 | 82 1/6W CARBON RES | |
| | R769 | QRD161J-820 | 82 1/6W CARBON RES | |
| | R770 | QRD161J-820 | 82 1/6W CARBON RES | |
| | R771 | QRD161J-181 | 180 1/6W CARBON RES | |
| | R772 | QRD161J-181 | 180 1/6W CARBON RES | |
| | R773 | QRD161J-181 | 180 1/6W CARBON RES | |
| | R774 | QRD161J-181 | 180 1/6W CARBON RES | |
| | R781 | QRD167J-562 | 5.6K 1/6W CARBON RES | |
| ⚠ | R783 | QRD14CJ-272S | 2.7K 1/4W UNF.CARBON | |
| ⚠ | R784 | QRD14CJ-272S | 2.7K 1/4W UNF.CARBON | |
| ⚠ | R785 | QRD14CJ-271S | 270 1/4W UNF.CARBON | |
| ⚠ | R786 | QRD14CJ-271S | 270 1/4W UNF.CARBON | |
| ⚠ | R787 | ERF032K-R22 | 0.22 3W CEM.RESIST | |
| ⚠ | R788 | ERF032K-R22 | 0.22 3W CEM.RESIST | |
| ⚠ | R789 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R790 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R791 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R792 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R793 | QRD125J-330 | 33 1/2W UNF.CARBON | |
| ⚠ | R794 | QRD125J-330 | 33 1/2W UNF.CARBON | |
| ⚠ | R795 | QRG022J-100GJ7 | 10 2W OXIDE META | |
| ⚠ | R796 | QRG022J-100GJ7 | 10 2W OXIDE META | |
| ⚠ | R802 | QRG022J-121GJ7 | 120 2W OXIDE META | |
| ⚠ | R804 | QRD125J-472 | 4.7K 1/2W UNF.CARBON | |
| ⚠ | R805 | QRD129J-392 | 3.9K 1/2W UNF.CARBON | |
| ⚠ | R806 | QRZ0077-121X | 120 1/4W FUSIBLE RE | |
| ⚠ | R808 | QRG022J-181GJ7 | 180 2W OXIDE META | |
| ⚠ | R809 | QRG022J-181GJ7 | 180 2W OXIDE META | |
| ⚠ | R811 | QRD125J-472 | 4.7K 1/2W UNF.CARBON | |
| ⚠ | R817 | QRG022J-121GJ7 | 120 2W OXIDE META | |

⚠ : SAFETY PARTS

## RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| ⚠ | R818 | QRG022J-151A | 150 2W OXIDE META | |
| ⚠ | R819 | QRZ0077-4R7 | 4.7 1/4W FUSE RESIS | |
| ⚠ | R820 | QRD125J-682 | 6.8K 1/2W UNF.CARBON | |
| ⚠ | R821 | QRX022J-3R9AM | 3.9 2W OXIDE META | |
| ⚠ | R822 | QRX022J-3R9AM | 3.9 2W OXIDE META | |
| ⚠ | R841 | QRD161J-104 | 100K 1/6W CARBON RES | |
| ⚠ | R842 | QRD161J-104 | 100K 1/6W CARBON RES | |
| ⚠ | R843 | QRD12CJ-2R2SX | 2.2 1/2W CARBON RES | |
| ⚠ | R844 | QRD12CJ-2R2SX | 2.2 1/2W CARBON RES | |
| | R901 | QRD161J-681 | 680 1/6W CARBON RES | |
| | R902 | QRD161J-681 | 680 1/6W CARBON RES | |
| | R903 | QRD167J-562 | 5.6K 1/6W CARBON RES | |
| | R904 | QRD167J-562 | 5.6K 1/6W CARBON RES | |
| | R905 | QRD161J-123 | 12K 1/6W CARBON RES | |
| | R906 | QRD161J-123 | 12K 1/6W CARBON RES | |
| | R907 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R908 | QRD167J-152 | 1.5K 1/6W CARBON RES | |
| | R909 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R911 | QRD167J-332 | 3.3K 1/6W CARBON RES | |
| | R912 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R913 | QRD161J-104 | 100K 1/6W CARBON RES | |
| | R914 | QRD161J-823 | 82K 1/6W CARBON RES | |
| | R915 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R916 | QRD161J-563 | 56K 1/6W CARBON RES | |
| | R917 | QRD161J-683 | 68K 1/6W CARBON RES | |
| | R918 | QRD161J-392 | 3.9K 1/6W CARBON RES | |
| | R921 | QRD161J-224 | 220K 1/6W CARBON RES | |
| | R922 | QRD161J-182 | 1.8K 1/6W CARBON RES | |
| ⚠ | R924 | QRG022J-821GJ7 | 820 2W OXIDE META | |
| ⚠ | R931 | QRD14CJ-330SX | 33 1/4W UNF.CARBON | |
| | R935 | QRD167J-562 | 5.6K 1/6W CARBON RES | |
| | R936 | QRD167J-822 | 8.2K 1/6W CARBON RES | |
| | R937 | QRD161J-103 | 10K 1/6W CARBON RES | |
| ⚠ | R941 | QRG012J-471A | 470 1W OXIDE META | |
| ⚠ | R942 | QRG012J-471A | 470 1W OXIDE META | |
| ⚠ | R961 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R962 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R963 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |
| ⚠ | R964 | QRZ0077-100 | 10 1/4W FUSIBLE RE | |

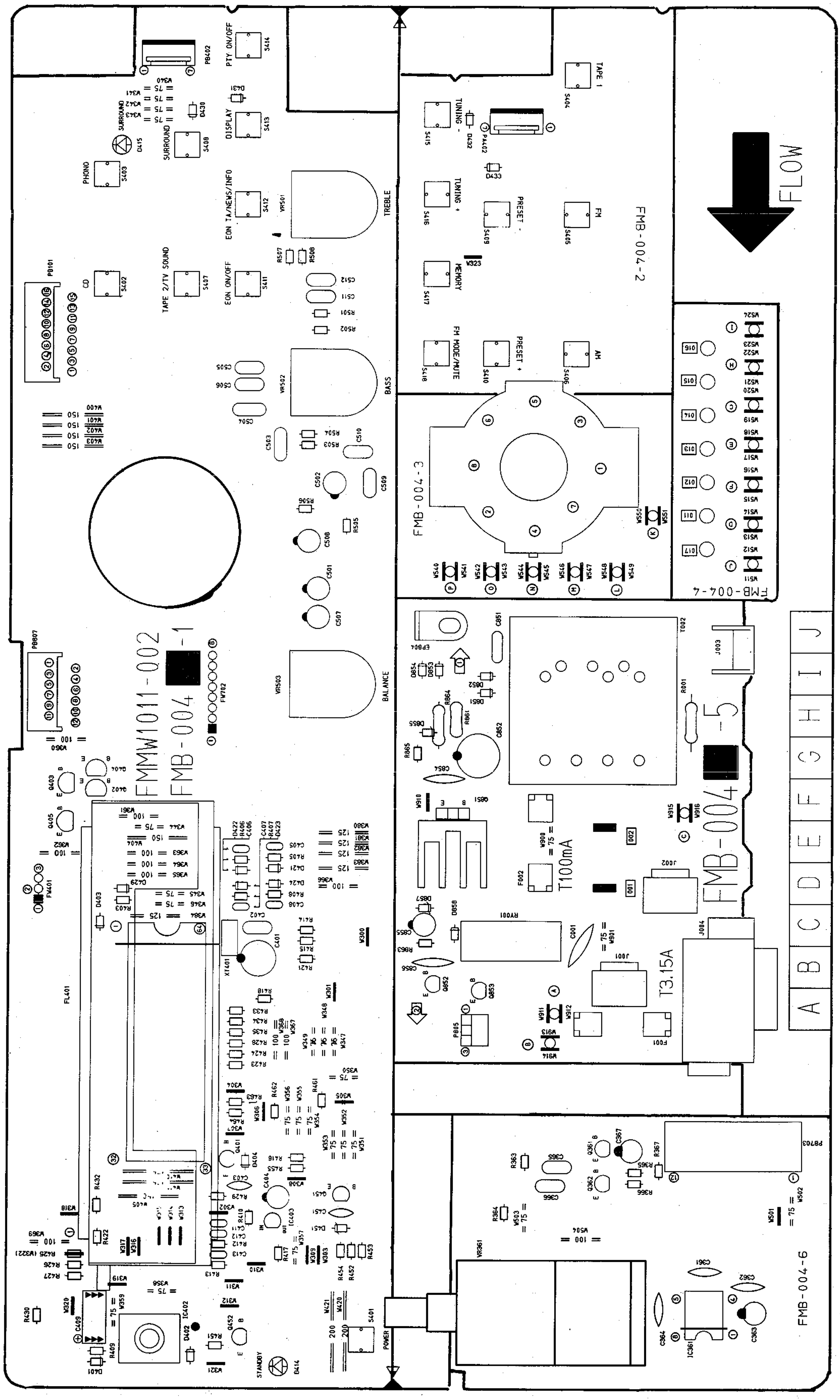
⚠ : SAFETY PARTS

## OTHERS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | | FMMW1009-002 | PRINTED BOA | |
| | | QXTF500-015 | SHRINK TUBE | |
| | J301 | EMN00TV-423AJ2 | PIN JACK | |
| | J302 | EMN00TV-421AJ2 | PIN JACK | |
| | J303 | EMN00TV-421AJ2 | PIN JACK | |
| | J901 | QMS6022-V01 | MICROPHONE | |
| | L331 | EQL4007-220 | INDUCTOR | |
| | L751 | EQL0121-1R2J1 | INDUCTOR | |
| | L752 | EQL0121-1R2J1 | INDUCTOR | |
| | L961 | EQL0011-R45J1 | INDUCTOR | |
| | L962 | EQL0011-R45J1 | INDUCTOR | |
| | S301 | QST4101-E15 | PUSH SWITCH **LOUDNESS** | |
| | S901 | QST4241-E05J2 | PUSH SWITCH **SPK 1** | |
| | S902 | QST4241-E05J2 | PUSH SWITCH **SPK 2** | |
| | EP801 | EMZ4002-001Z | EARTH PLATE | |
| | EP802 | EMZ4002-001Z | EARTH PLATE | |
| | EP803 | E70225-001 | EARTH PLATE | |
| | FW103 | EWR36D-25LS | FLAT WIRE A **6PIN** | |
| | FW801 | EWR36D-45SS | FLAT WIRE A **6PIN** | |
| | FW903 | EWR36D-35SS | FLAT WIRE A **6PIN** | |
| | JT001 | EMV7122-004Z | CONNECT TER **4PIN** | |
| | JT002 | EMV7122-004Z | CONNECT TER **4PIN** | |
| | PA703 | EMV7163-012 | CONNECT TER **12PIN** | |
| | PA807 | VMC0261-012 | CONNECT TER **12PIN** | |
| | RY901 | ESK7D24-2120 | RELAY | |
| | ST901 | FMMJ4002-001 | SPEAKER TER | |

## ■ FMB-004 ☐ Front,Tone Control & Power Supply PC Board Ass'y

Note: FMB-004 ☐ varies according to the areas employed.See note (2) when placing an order.


FMB-004-1
FMMW1011-002
FMB-004-2
FMB-004-3
FMB-004-4
FMB-004-5
FMB-004-6
FLOW
PTY ON/OFF
DISPLAY
SURROUND
PHONO
EON TA/NEWS/INFO
TREBLE
TAPE 2/TV SOUND
EON ON/OFF
CD
BASS
BALANCE
TAPE 1
TUNING -
TUNING +
PRESET -
FM
MEMORY
FM MODE/MUTE
PRESET +
AM
POWER
STANDBY
T100mA
T3.15A
A
B
C
D
E
F
G
H
I
J

Note (2)

| PC Board Ass'y | Version | Designated Areas |
|---|---|---|
| FMB-004 A | BS | the U.K. |
| FMA-002 B | EF | Continental Europe |
|  | EN | Scandinavia |
|  | G | Germany |
| FMA-002 C | GI | Italy |

## TRANSISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
|  | Q361 | 2SD2144S(VW) | SI.TRANSIST ROHM |  |
|  | Q362 | 2SD2144S(VW) | SI.TRANSIST ROHM |  |
|  | Q401 | DTC114YS | DIGITAL TRA ROHM |  |
|  | Q402 | DTC114YS | DIGITAL TRA ROHM |  |
|  | Q403 | DTC114YS | DIGITAL TRA ROHM |  |
|  | Q404 | DTC114YS | DIGITAL TRA ROHM |  |
|  | Q405 | DTC114YS | DIGITAL TRA ROHM |  |
|  | Q451 | 2SC1740S(R/S) | SI.TRANSIST ROHM |  |
|  | Q452 | 2SC1740S(R/S) | SI.TRANSIST ROHM |  |
|  | Q852 | 2SC2235(O/Y) | SI.TRANSIST TOSHIBA |  |
|  | Q853 | BA1L3Z | DIGITAL TRA NEC |  |

## I. C. S.

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
|  | IC361 | LB1639-CV | I.C(DIGI-OT SANYO |  |
|  | IC401 | MN171202J5C | I.C(MICRO-C MATSUSHITA |  |
|  | IC402 | NJH32H380A | I.C(M) DAINICHI |  |
|  | IC403 | PST600E-T | I.C(MONO-AN 0062 |  |

## DIODES

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
|  | D401 | 1SS133 | SI.DIODE ROHM |  |
|  | D402 | 1SS133 | SI.DIODE ROHM |  |
|  | D403 | 1SS133 | SI.DIODE ROHM |  |
|  | D404 | 1SS133 | SI.DIODE ROHM |  |
|  | D414 | SLA-580LT70F124 | L.E.D. ROHM | BS |
|  | D414 | SLR-54VC50F124 | L.E.D. ROHM | EF |
|  | D414 | SLR-54VC50F124 | L.E.D. ROHM | EN |
|  | D414 | SLR-54VC50F124 | L.E.D. ROHM | G |
|  | D414 | SLR-54VC50F124 | L.E.D. ROHM | GI |
|  | D415 | SLR-34DC50F124 | L.E.D. |  |
|  | D422 | 1SS133 | SI.DIODE ROHM |  |
|  | D429 | 1SS133 | SI.DIODE ROHM |  |
|  | D430 | 1SS133 | SI.DIODE ROHM |  |
|  | D431 | 1SS133 | SI.DIODE ROHM |  |
|  | D432 | 1SS133 | SI.DIODE ROHM |  |
|  | D433 | 1SS133 | SI.DIODE ROHM |  |
|  | D451 | MTZ7.5JC | ZENER DIODE ROHM |  |
|  | D851 | 1SR35-200A | SI.DIODE ROHM |  |
|  | D852 | 1SR35-200A | SI.DIODE ROHM |  |
|  | D853 | 1SR35-200A | SI.DIODE ROHM |  |
|  | D854 | 1SR35-200A | SI.DIODE ROHM |  |
|  | D857 | MTZ6.2JC | ZENER DIODE ROHM |  |
|  | D858 | 1SS133 | SI.DIODE ROHM |  |

## CAPACITORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| ⚠ | C001 | QCZ9019-472BS | 4700PF CERAMIC | BS |
| ⚠ | C001 | QCZ9019-472 | 4700PF C.CAPACITO | EF |
| ⚠ | C001 | QCZ9019-472 | 4700PF C.CAPACITO | EN |
| ⚠ | C001 | QCZ9019-472 | 4700PF C.CAPACITO | G |
| ⚠ | C001 | QCZ9019-472 | 4700PF C.CAPACITO | GI |
|  | C361 | QCY21HK-331 | 330PF 50V CER.CAPACI |  |
|  | C362 | QCY21HK-331 | 330PF 50V CER.CAPACI |  |
|  | C363 | QETB0JM-107 | 100MF 6.3V AL E.CAPAC |  |
|  | C364 | QCF21HP-473A | 0.047MF 50V CER.CAPACI |  |
|  | C365 | QFLB1HJ-104 | 0.1MF 50V MYLAR CAPA |  |
|  | C366 | QFLB1HJ-104 | 0.1MF 50V MYLAR CAPA |  |
|  | C367 | QETB1EM-226 | 22MF 25V AL E.CAPAC |  |
|  | C401 | QEK61AM-227ZM | 220MF 10V AL E.CAPAC |  |
|  | C402 | QCZ0202-155 | 1.5MF 25V CER.RESIST |  |
|  | C403 | QCF21HP-223A | 0.022MF 50V CER.CAPACI |  |
|  | C404 | QEK51HM-225G | 2.2MF 50V AL E.CAPAC |  |
|  | C405 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C406 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C407 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C408 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C409 | QEAD0HZ-479A | 47000MF E.CAPACITO |  |
|  | C411 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C412 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C413 | QCBB1HK-102Y | 1000PF 50V CER.CAPACI |  |
|  | C451 | QCS21HJ-221 | 220PF 50V CER.CAPACI |  |
|  | C501 | QEK51HM-105G | 1MF 50V AL E.CAPAC |  |
|  | C502 | QEK51HM-105G | 1MF 50V AL E.CAPAC |  |
|  | C503 | QFLB1HJ-823 | 0.082MF 50V MYLAR CAPA |  |
|  | C504 | QFLB1HJ-823 | 0.082MF 50V MYLAR CAPA |  |
|  | C505 | QFLB1HJ-153 | 0.015MF 50V MYLAR CAPA |  |
|  | C506 | QFLB1HJ-153 | 0.015MF 50V MYLAR CAPA |  |
|  | C507 | QETB1HM-105 | 1MF 50V AL E.CAPAC |  |
|  | C508 | QETB1HM-105 | 1MF 50V AL E.CAPAC |  |
|  | C509 | QFLB1HJ-332 | 3300PF 50V MYLAR CAPA |  |
|  | C510 | QFLB1HJ-332 | 3300PF 50V MYLAR CAPA |  |
|  | C511 | QFLB1HJ-183 | 0.018MF 50V MYLAR CAPA |  |
|  | C512 | QFLB1HJ-183 | 0.018MF 50V MYLAR CAPA |  |
|  | C851 | QFN82AJ-472 | 4700PF 100V MYLAR CAPA |  |
|  | C852 | QETB1EM-227 | 220MF 25V AL E.CAPAC |  |
|  | C855 | QETB1CM-476 | 47MF 16V AL E.CAPAC |  |
|  | C856 | QCF21HP-472 | 4700PF 50V CER.CAPACI |  |

## RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
|  | R363 | QRD167J-682 | 6.8K 1/6W CARBON RES |  |
|  | R364 | QRD167J-682 | 6.8K 1/6W CARBON RES |  |
|  | R365 | QRD161J-222 | 2.2K 1/6W CARBON RES |  |
|  | R366 | QRD161J-222 | 2.2K 1/6W CARBON RES |  |
|  | R367 | QRD161J-202 | 2K 1/6W CARBON RES |  |
|  | R403 | QRD161J-220 | 22 1/6W CARBON RES |  |
|  | R405 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R406 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R407 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R408 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R409 | QRD161J-331 | 330 1/6W CARBON RES |  |
|  | R410 | QRD167J-223 | 22K 1/6W CARBON RES |  |
|  | R412 | QRD161J-221 | 220 1/6W CARBON RES |  |
|  | R413 | QRD161J-221 | 220 1/6W CARBON RES |  |
|  | R414 | QRD161J-271 | 270 1/6W CARBON RES |  |
|  | R415 | QRD161J-221 | 220 1/6W CARBON RES |  |
|  | R416 | QRD161J-472 | 4.7K 1/6W CARBON RES |  |
|  | R417 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R418 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R421 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R423 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R424 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R426 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R427 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R428 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R429 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R430 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R432 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R433 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R434 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R435 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R451 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R452 | QRD161J-473 | 47K 1/6W CARBON RES |  |
|  | R453 | QRD167J-223 | 22K 1/6W CARBON RES |  |
|  | R454 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R455 | QRD161J-103 | 10K 1/6W CARBON RES |  |
|  | R461 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R462 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R463 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R464 | QRD161J-471 | 470 1/6W CARBON RES |  |
|  | R501 | QRD161J-203 | 20K 1/6W CARBON RES |  |
|  | R502 | QRD161J-203 | 20K 1/6W CARBON RES |  |
|  | R503 | QRD161J-362 | 3.6K 1/6W CARBON RES |  |
|  | R504 | QRD161J-362 | 3.6K 1/6W CARBON RES |  |
|  | R505 | QRD161J-472 | 4.7K 1/6W CARBON RES |  |
|  | R506 | QRD161J-472 | 4.7K 1/6W CARBON RES |  |
|  | R507 | QRD161J-821 | 820 1/6W CARBON RES |  |
|  | R508 | QRD161J-821 | 820 1/6W CARBON RES |  |
| ⚠ | R861 | QRD14CJ-270SX | 27 1/4W UNF.CARBON | BS |
| ⚠ | R861 | QRD14CJ-220S | 22 1/4W UNF.CARBON | EF |
| ⚠ | R861 | QRD14CJ-220S | 22 1/4W UNF.CARBON | EN |
| ⚠ | R861 | QRD14CJ-220S | 22 1/4W UNF.CARBON | G |
| ⚠ | R861 | QRD14CJ-220S | 22 1/4W UNF.CARBON | GI |
| ⚠ | R863 | QRV144F-8200 | 1/4W CONST.META |  |
|  | VR361 | QVDB71B-E15BJ5 | 100K VARIABLE R |  |

⚠ SAFETY PARTS

RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | VR501 | QVDB92C-E15CJ3 | 100K VARIABLE R | |
| | VR502 | QVDB92C-E15CJ3 | 100K VARIABLE R | |
| | VR503 | QVDA92W-E15EJ3 | 100K VARIABLE R | |

OTHERS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | | FMMW1011-002 | PRINTED BOA | |
| | | EMZ4001-001 | TAB | |
| | | VMZ0087-001Z | FUSE HOLDER | |
| | | QWE881-26RR | VINYL WIRE | |
| | | QWE883-28RR | VINYL WIRE | |
| | | FMMW1011-002BS | PRINTED BOA | BS |
| | J002 | EMV5137-002 | CONNECT TER **2PIN** | |
| | J003 | E70225-001 | EARTH PLATE | |
| | P805 | EMV7122-103 | CONNECT TER **3PIN** | |
| | S401 | ESP0001-023M | TACT SWITCH **POWER** | |
| | S402 | ESP0001-023M | TACT SWITCH **CD** | |
| | S403 | ESP0001-023M | TACT SWITCH **PHONO** | |
| | S404 | ESP0001-023M | TACT SWITCH **TAPE 1** | |
| | S405 | ESP0001-023M | TACT SWITCH **FM** | |
| | S406 | ESP0001-023M | TACT SWITCH **AM** | |
| | S407 | ESP0001-023M | TACT SWITCH **TAPE 2/TV SOUND** | |
| | S408 | ESP0001-023M | TACT SWITCH **SURROUND** | |
| | S409 | ESP0001-023M | TACT SWITCH **PRESET DOWN** | |
| | S410 | ESP0001-023M | TACT SWITCH **PRESET UP** | |
| | S411 | ESP0001-023M | TACT SWITCH **EON ON/OFF** | |

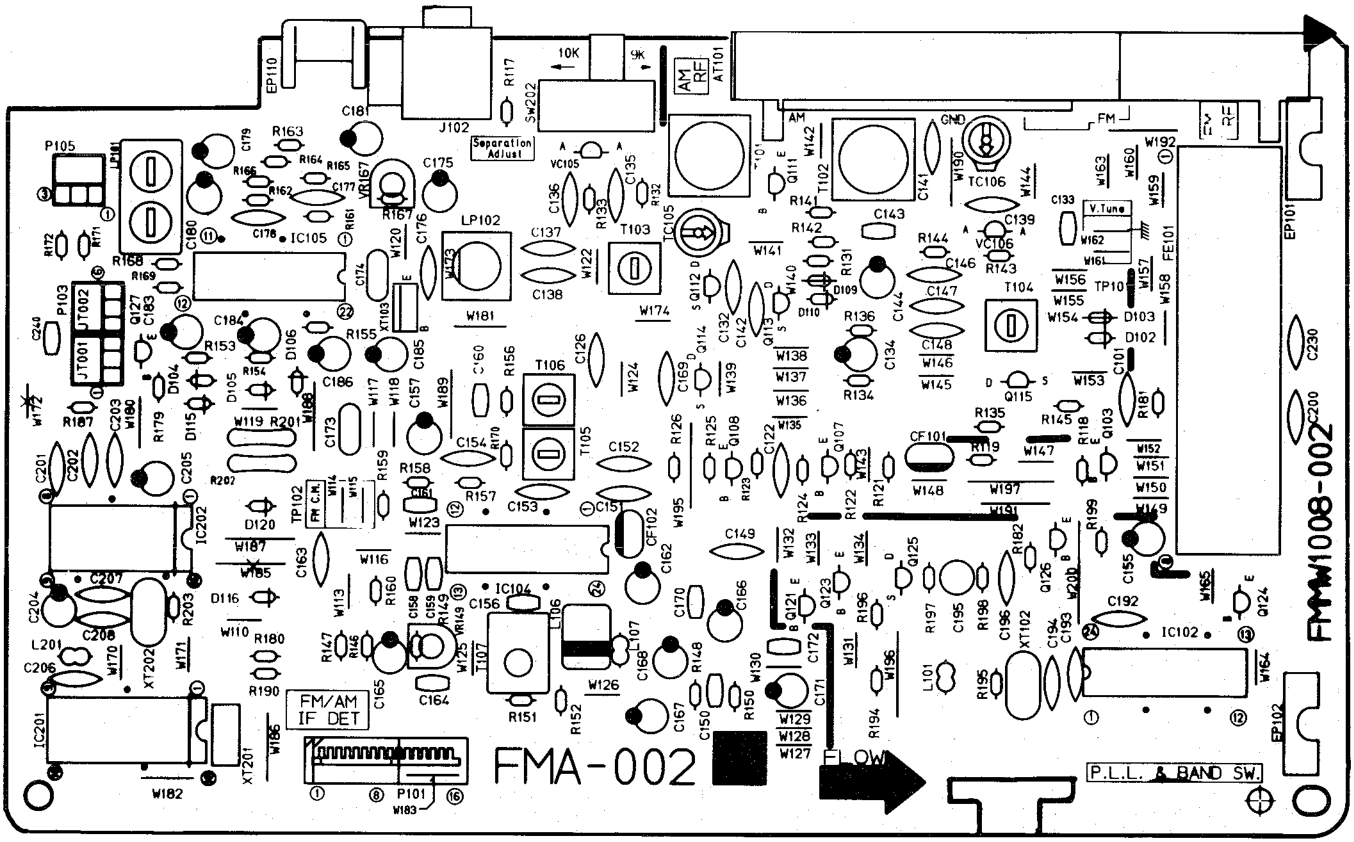
OTHERS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | S412 | ESP0001-023M | TACT SWITCH **EON TA/NEWS/INFO** | |
| | S413 | ESP0001-023M | TACT SWITCH **DISPLAY** | |
| | S414 | ESP0001-023M | TACT SWITCH **PTY ON/OFF** | |
| | S415 | ESP0001-023M | TACT SWITCH **TUNING DOWN** | |
| | S416 | ESP0001-023M | TACT SWITCH **TUNING UP** | |
| | S417 | ESP0001-023M | TACT SWITCH **FM MODE/MUTE** | |
| | S418 | ESP0001-023M | TACT SWITCH **MEMORY** | |
| ⚠ | T002 | ETP1000-41EABS | POWER TRASN | BS |
| ⚠ | T002 | ETP1000-41EA | POWER TRASN | EF |
| ⚠ | T002 | ETP1000-41EA | POWER TRASN | EN |
| ⚠ | T002 | ETP1000-41EA | POWER TRASN | G |
| ⚠ | T002 | ETP1000-41EA | POWER TRASN | GI |
| | EP804 | EMZ4002-001Z | EARTH PLATE | |
| | FH001 | E309106-001SM | FL HOLDER | |
| | FL401 | ELU0001-183 | FLUORESCENT | |
| | FS001 | E3400-431 | FELT SPACER | |
| | FS002 | E3400-431 | FELT SPACER | |
| | FW401 | EWR33D-30LS | FLAT WIRE A **3PIN** | |
| | FW702 | EWR38D-30LS | FLAT WIRE A **8PIN** | |
| | PA402 | VMC0261-R07 | CONNECT TER **7PIN** | |
| | PB101 | VMC0261-R16 | CONNECT TER **16PIN** | |
| | PB402 | VMC0261-R07 | CONNECT TER **7PIN** | |
| | PB703 | EMV5163-012R | CONNECT TER **12PIN** | |
| | PB807 | VMC0261-R12 | CONNECT TER **12PIN** | |
| ⚠ | RY001 | ESK1D12-118J1BS | RELAY | BS |
| ⚠ | RY001 | ESK1D12-118J1 | RELAY | EF |
| ⚠ | RY001 | ESK1D12-118J1 | RELAY | EN |
| ⚠ | RY001 | ESK1D12-118J1 | RELAY | G |
| ⚠ | RY001 | ESK1D12-118J1 | RELAY | GI |
| | XT401 | ECX0060-000EM | CERAMIC RES | |

⚠ : SAFETY PARTS

## ■ FMA-002 ☐ Tuner PC Board Assy

**Note: FMA-002 ☐ varies according to the areas employed.See note (3) when placing an order.**



EP110
J102
R117
SW202
10K
9K
AM RF
AT101
AM
GND
FM
FM RF
EP101
P105
Separation Adjust
VC105
LP102
T102
T103
TC105
TC106
VC106
T104
V.Tune
TP101
FE101
JT002
JT001
P103
IC105
T106
T105
CF101
CF102
IC104
T107
L106
L107
IC201
IC202
XT201
XT202
L201
FM/AM IF DET
P101
FMA-002
FLOW
IC102
XT102
L101
EP102
P.L.L. & BAND SW.
FMW1008-002

## Note (3)

| PC Board Ass'y | Version | Designated Areas |
|---|---|---|
| FMA-002 E | BS | the U.K. |
| FMA-002 D | EF<br>EN | Continental Europe<br>Scandinavia |
| FMA-002 G | G | Germany |
| FMA-002 F | GI | Italy |

## TRANSISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | Q103 | 2SC461 | SI.TRANSIST | |
| | Q107 | 2SC535 | SI.TRANSIST HITACHI | |
| | Q108 | 2SC461 | SI.TRANSIST | |
| | Q111 | 2SD1302 | SI.TRANSIST MATSUSHITA | |
| | Q112 | 2SK301(P,Q) | F.E.T. MATSUSHITA | |
| | Q113 | 2SK301(P,Q) | F.E.T. MATSUSHITA | |
| | Q114 | 2SK301(P,Q) | F.E.T. MATSUSHITA | |
| | Q115 | 2SK301(P,Q) | F.E.T. MATSUSHITA | |
| | Q121 | BN1A4P | DIGITAL TRA NEC | |
| | Q123 | BN1A4P | DIGITAL TRA NEC | |
| | Q124 | BN1A4P | DIGITAL TRA NEC | |
| | Q125 | 2SK301(P,Q) | F.E.T. MATSUSHITA | |
| | Q126 | 2SC458(C,D) | SI.TRANSIST HITACHI | |
| | Q127 | BA1L4M | DIGITAL TRA NEC | |

## I. C. S.

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | IC102 | LC7218 | I.C(DIGI-MO | |
| | IC104 | LA1266A | I.C(MONO-AN SANYO | |
| | IC105 | LA3401 | I.C(MONO-AN SANYO | |
| | IC201 | LC7073 | I.C(DIGI-MO SANYO | |
| | IC202 | SAA6579 | I.C(M) | |

## DIODES

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | D102 | 1SS133 | SI.DIODE ROHM | |
| | D103 | 1SS133 | SI.DIODE ROHM | |
| | D104 | 1SS133 | SI.DIODE ROHM | |
| | D105 | 1SS133 | SI.DIODE ROHM | |
| | D106 | 1SS133 | SI.DIODE ROHM | |
| | D109 | 1SS133 | SI.DIODE ROHM | |
| | D110 | 1SS133 | SI.DIODE ROHM | |
| | D115 | 1SS133 | SI.DIODE ROHM | |
| | D116 | 1SS133 | SI.DIODE ROHM | |
| | D120 | 1SS133 | SI.DIODE ROHM | |
| | VC105 | SVC342(L) | VARI-CAPA D SANYO | |
| | VC106 | SVC342(L) | VARI-CAPA D SANYO | |

## CAPACITORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | C101 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C122 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C126 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C132 | QCS31HJ-561Z | 560PF 50V CER.CAPACI | |
| | C133 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | |
| | C134 | QETB1EM-106 | 10MF 25V AL E.CAPAC | |
| | C135 | QCC21EM-223 | 0.022MF 25V CER.CAPACI | |
| | C136 | QCT25CH-180Z | 18PF 50V CER.CAPACI | |
| | C137 | QCT26CH-221 | 220PF 50V CER.CAPACI | |
| | C138 | QCT26CH-241 | 240PF 50V CER.CAPACI | |
| | C139 | QCC21EM-223 | 0.022MF 25V CER.CAPACI | |
| | C141 | QCS21HJ-270 | 27PF 50V CER.CAPACI | |
| | C142 | QCY31HK-272Z | 2700PF 50V CER.CAPACI | |
| | C143 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | |
| | C144 | QETB1EM-106 | 10MF 25V AL E.CAPAC | |
| | C146 | QCT26CH-680 | 68PF 50V CER.CAPACI | |
| | C147 | QCT25CH-220Z | 22PF 50V CER.CAPACI | |
| | C148 | QCT25CH-121 | 120PF 50V CER.CAPACI | |
| | C149 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C150 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | |

## CAPACITORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | C151 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C152 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C153 | QCC21EM-223 | 0.022MF 25V CER.CAPACI | |
| | C154 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C155 | QETB1EM-226 | 22MF 25V AL E.CAPAC | |
| | C156 | QCVB1CM-103Y | 0.01MF 16V CER.CAPACI | |
| | C157 | QETB1HM-474 | 0.47MF 50V ELECTRO | |
| | C158 | QCBB1HK-101Y | 100PF 50V CER.CAPACI | |
| | C159 | QCBB1HK-101Y | 100PF 50V CER.CAPACI | |
| | C160 | QCBB1HK-101Y | 100PF 50V CER.CAPACI | |
| | C161 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | |
| | C162 | QETB1EM-106 | 10MF 25V AL E.CAPAC | |
| | C163 | QCY31HK-332Z | 3300PF 50V CER.CAPACI | |
| | C164 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | |
| | C165 | QETB1HM-474 | 0.47MF 50V ELECTRO | |
| | C166 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C167 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C168 | QETB1HM-475E | 4.7MF 50V E.CAPACITO | |
| | C169 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C170 | QCHB1EZ-223 | 0.022MF 25V CER.CAPACI | |
| | C171 | QETB1EM-106 | 10MF 25V AL E.CAPAC | |
| | C172 | QCVB1CM-103Y | 0.01MF 16V CER.CAPACI | |
| | C173 | QFLB1HK-223 | 0.022MF 50V MYLAR CAPA | |
| | C174 | QFLB1HK-473 | 0.047MF 50V MYLAR CAPA | |
| | C175 | QETB1EM-106 | 10MF 25V AL E.CAPAC | |
| | C176 | QCY31HK-102Z | 1000PF 50V CER.CAPACI | |
| | C177 | QCS21HJ-271A | 270PF 50V CER.CAPACI | |
| | C178 | QCS21HJ-271A | 270PF 50V CER.CAPACI | |
| | C179 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C180 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C181 | QETB1EM-106 | 10MF 25V AL E.CAPAC | |
| | C183 | QETB1HM-105 | 1MF 50V AL E.CAPAC | |
| | C184 | QETB1HM-105 | 1MF 50V AL E.CAPAC | |
| | C185 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C186 | QETB1HM-474 | 0.47MF 50V ELECTRO | |
| | C192 | QCC21EM-473 | 0.047MF 25V CER.CAPACI | |
| | C193 | QCS21HJ-180A | 18PF 50V CER.CAPACI | |
| | C194 | QCS21HJ-180A | 18PF 50V CER.CAPACI | |
| | C195 | QEN51HM-474 | 0.47MF 50V NP E.CAPAC | |
| | C196 | QCY31HK-102Z | 1000PF 50V CER.CAPACI | |
| | C201 | QCS31HJ-561Z | 560PF 50V CER.CAPACI | |
| | C202 | QCF21HP-223A | 0.022MF 50V CER.CAPACI | |
| | C203 | QCS31HJ-331Z | 330PF 50V CER.CAPACI | |
| | C204 | QETC1CM-106Z | 10MF 16V AL E.CAPAC | |
| | C205 | QETB1HM-225 | 2.2MF 50V AL E.CAPAC | |
| | C206 | QCC21EM-104 | 0.1MF 25V CER.CAPACI | |
| | C207 | QCS21HJ-470 | 47PF 50V CER.CAPACI | |
| | C208 | QCS21HJ-820 | 82PF 50V CER.CAPACI | |
| | C230 | QCF21HP-103A | 0.01MF 50V CER.CAPACI | |
| | C240 | QCBB1HK-101Y | 100PF 50V CER.CAPACI | |

## RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | R117 | QRD161J-100 | 10 1/6W CARBON RES | |
| | R118 | QRD167J-332 | 3.3K 1/6W CARBON RES | |
| | R119 | QRD161J-221 | 220 1/6W CARBON RES | |
| | R121 | QRD161J-391 | 390 1/6W CARBON RES | |
| | R122 | QRD167J-272 | 2.7K 1/6W CARBON RES | |
| | R123 | QRD161J-102 | 1K 1/6W CARBON RES | |
| | R124 | QRD161J-681 | 680 1/6W CARBON RES | |
| | R125 | QRD167J-332 | 3.3K 1/6W CARBON RES | |
| | R126 | QRD161J-221 | 220 1/6W CARBON RES | |
| | R131 | QRD161J-331 | 330 1/6W CARBON RES | |
| | R132 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R133 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R134 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R135 | QRD161J-470 | 47 1/6W CARBON RES | |
| | R136 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R141 | QRD161J-472 | 4.7K 1/6W CARBON RES | |
| | R142 | QRD161J-331 | 330 1/6W CARBON RES | |
| | R143 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R144 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R145 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R146 | QRD167J-560 | 56 1/6W CARBON RES | |
| | R147 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R148 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R149 | QRD161J-273 | 27K 1/6W CARBON RES | |
| | R150 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R151 | QRD161J-224 | 220K 1/6W CARBON RES | |
| | R152 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R153 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R154 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R155 | QRD167J-562 | 5.6K 1/6W CARBON RES | |
| | R157 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R158 | QRD161J-333 | 33K 1/6W CARBON RES | |
| | R159 | QRD161J-561 | 560 1/6W CARBON RES | |
| | R160 | QRD161J-273 | 27K 1/6W CARBON RES | |
| | R161 | QRD161J-184 | 180K 1/6W CARBON RES | |
| | R162 | QRD161J-184 | 180K 1/6W CARBON RES | |
| | R163 | QRD167J-332 | 3.3K 1/6W CARBON RES | |
| | R164 | QRD167J-332 | 3.3K 1/6W CARBON RES | |
| | R165 | QRD161J-274 | 270K 1/6W CARBON RES | |
| | R166 | QRD161J-274 | 270K 1/6W CARBON RES | |

### RESISTORS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | R168 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R169 | QRD161J-103 | 10K 1/6W CARBON RES | |
| | R170 | QRD167J-822 | 8.2K 1/6W CARBON RES | |
| | R171 | QRD167J-682 | 6.8K 1/6W CARBON RES | |
| | R172 | QRD167J-682 | 6.8K 1/6W CARBON RES | |
| | R179 | QRD167J-562 | 5.6K 1/6W CARBON RES | |
| | R180 | QRD161J-472 | 4.7K 1/6W CARBON RES | |
| | R181 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R182 | QRD161J-181 | 180 1/6W CARBON RES | |
| | R187 | QRD161J-101 | 100 1/6W CARBON RES | |
| | R190 | QRD161J-472 | 4.7K 1/6W CARBON RES | |
| | R194 | QRD161J-472 | 4.7K 1/6W CARBON RES | |
| | R195 | QRD161J-473 | 47K 1/6W CARBON RES | |
| | R196 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R197 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | R198 | QRD167J-822 | 8.2K 1/6W CARBON RES | |
| | R199 | QRD161J-472 | 4.7K 1/6W CARBON RES | |
| ⚠ | R201 | QRZ0077-680 | 68 1/4W FUSIBLE RE | |
| ⚠ | R202 | QRZ0077-470 | 47 1/4W FUSIBLE RE | |
| | R203 | QRD161J-222 | 2.2K 1/6W CARBON RES | |
| | VR167 | QVPE601-104 | 100K 0.15W TRIMMER RE | |

⚠ : SAFETY PARTS

### OTHERS

| ⚠ | ITEM | PART NUMBER | DESCRIPTION | AREA |
|---|---|---|---|---|
| | | FMMW1008-002A | PRINTED BOA | |
| | J102 | QMS3501-021 | PIN JACK | |
| | L101 | EQL4007-1R0 | INDUCTOR | |
| | L106 | EQL3001-102K | INDUCTOR | |
| | L201 | EQL4007-101 | INDUCTOR | |
| | P101 | VMC0261-016 | CONNECT. TER **16PIN** | |
| | T101 | EQR1111-014 | RF COIL | |
| | T102 | FMQZ0001-001 | RF COIL | |
| | T103 | EQR1207-015 | RF COIL | |
| | T104 | EQR1307-009 | RF COIL | |
| | T105 | EQT2140-017 | I.F.TRANSFO | |
| | T107 | ECB1560-010 | CERAMIC FIL | |
| | AT101 | EMB41YV-301K | ANTENNA TER | |
| | CF101 | ECB2118-007R | CERAMIC FIL | |
| | CF102 | ECB2118-007R | CERAMIC FIL | |
| | EP101 | E65396-003 | EARTH PLATE | |
| | EP102 | E65396-003 | EARTH PLATE | |
| | EP110 | E70225-001 | EARTH PLATE | |
| | FE101 | EAF2203-005 | FRONT END | |
| | JT001 | EMV7122-103 | CONNECT TER **3PIN** | |
| | JT002 | EMV7122-103 | CONNECT TER **3PIN** | |
| | LP101 | EQF0101-002 | LOWPASS FIL | |
| | LP102 | EQF0102-001 | LOWPASS FIL | |
| | TC105 | ENZ1003-006 | TRIMMER CAP | |
| | TC106 | ENZ1003-006 | TRIMMER CAP | |
| | XT102 | ECX0007-200KWJ1 | CRYSTAL | |
| | XT103 | ECX0000-456KR | CERAMIC RES | |
| | XT201 | EFO-EC4004T4 | CERAMIC RES | |
| | XT202 | VCX5057-001 | CRYSTAL | |

## Accessories List

Symbol No. | M | 2 | M | M |

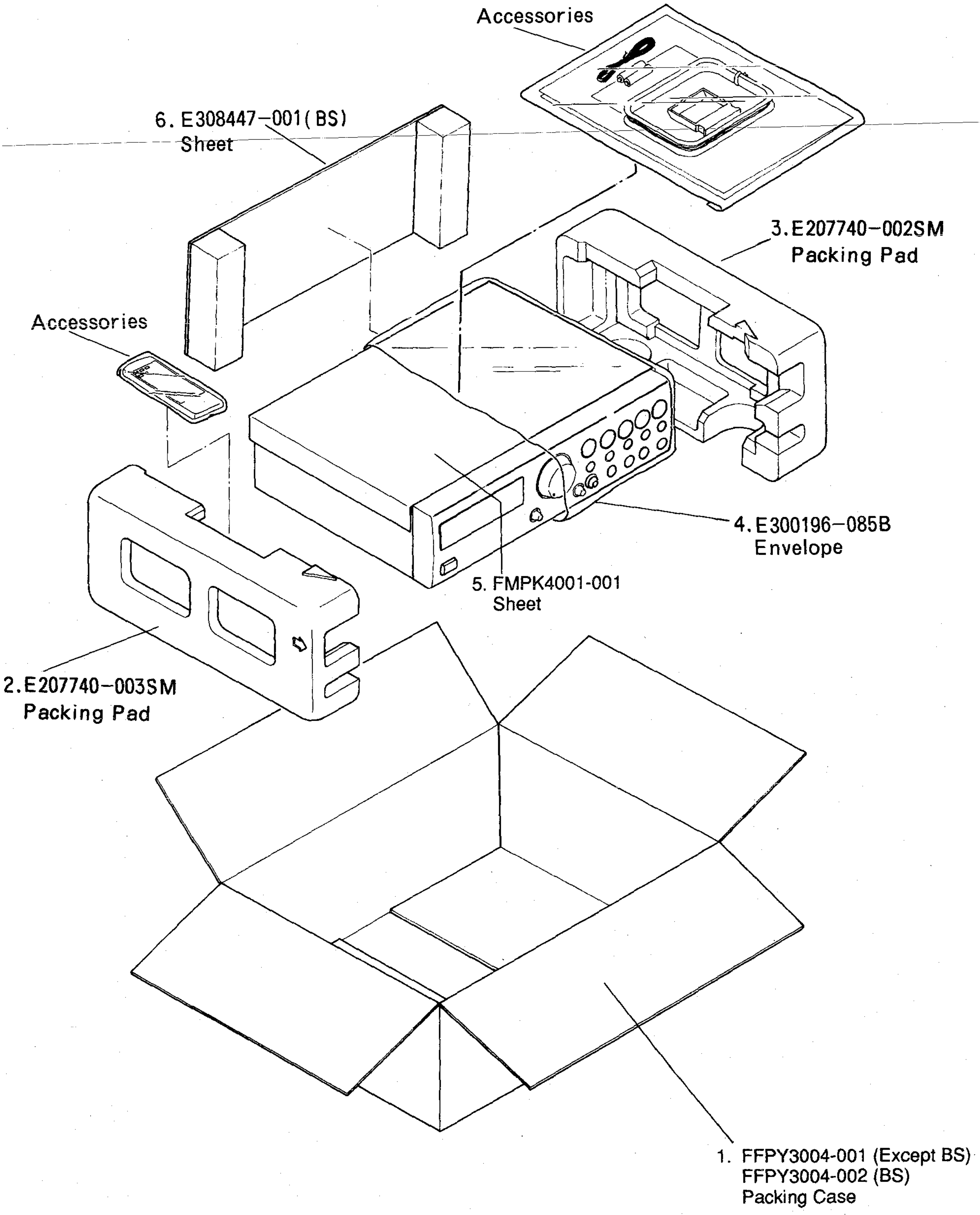
| ⚠ | Item | Part Number | Part Name | Q'ty | Description | Area |
|---|---|---|---|---|---|---|
| | 1 | E30580-2189ABS | INSTRUCTION BOOK | 1 | | BS |
| | | E30580-2189A | INSTRUCTION BOOK | 1 | | EF |
| | | E30580-2190A | INSTRUCTION BOOK | 1 | | EN |
| | | E30580-2189A | INSTRUCTION BOOK | 1 | | G |
| | | E30580-2189A | INSTRUCTION BOOK | 1 | | GI |
| | 2 | RM-SR316RU | WIRE-LESS REMOTE CONTROL | 1 | | |
| | 3 | E03614-004 | FM FEEDER ANTENNA | 1 | | BS |
| | | E03614-004 | FM FEEDER ANTENNA | 1 | | EF |
| | | E03614-004 | FM FEEDER ANTENNA | 1 | | EN |
| | | E67007-001 | ANTENNA WIRE | 1 | | G |
| | | E03614-004 | FM FEEDER ANTENNA | 1 | | GI |
| | 4 | EQB4001-015 | LOOP ANTENNA | 1 | | |
| | 5 | UM-3(DJ)-2PSA | BATTERY | 1 | | |
| | 6 | EMZ2001-014 | ADAPTOR PLUG | 1 | | BS |
| | | EMZ2001-014 | ADAPTOR PLUG | 1 | | EF |
| | | EMZ2001-014 | ADAPTOR PLUG | 1 | | EN |
| | | EMZ2001-014 | ADAPTOR PLUG | 1 | | GI |
| | 7 | E300196-033B | POLY BAG | 1 | | |
| | - | E43486-340A | SAFETY SHEET | 1 | | BS |
| | - | BT20060 | WARRANTY CARD | 1 | | BS |
| | - | BT-20066A | WARRANTY CARD | 1 | | BS |
| ⚠ | - | EMC0202-001BS | AC PLUG | 1 | | BS |
| | - | E43486-371A | INSTRUCTION SHEET | 1 | | BS |
| | - | BT-20134 | WARRANTY CARD | 1 | | G |

**The Marks for Designated Areas**

BS .. the U.K. EF ... Continental Europe ... EN .... Scandinavia
G ... Germany GI ... Itary
No mark indicates all area.

# Packing Materials and Part Numbers

Symbol No. M 3 M M


Accessories
6. E308447-001(BS)
Sheet
3. E207740-002SM
Packing Pad
Accessories
4. E300196-085B
Envelope
5. FMPK4001-001
Sheet
2. E207740-003SM
Packing Pad
1. FFPY3004-001 (Except BS)
FFPY3004-002 (BS)
Packing Case

**The Marks for Designated Areas**

BS .... the U.K.
G ..... Germany
EF .... Continental Europe
GI .... Italy
EN .... Scandinavia
No mark indicates all area.